Volume-Duration-Frequencies for Ungaged Catchments in Texas

Volume I. Calculation of Regional Regression Equations

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ABSTRACT

This report summarizes results from studies to determine relationships among the volume, duration and frequencies of floods in ungaged catchments in Texas. Methodologies were adopted for determining flood volumes at unregulated, non-urban catchments. Separate methodologies were developed for small and large watersheds. Regression equations were developed for twelve regions to estimate flood volumes for different durations and recurrence intervals. "Window Test" was conducted to establish a methodology to separate small and large watersheds based on their response characteristics. Regional flood volume-duration-frequency equations were developed for 8 of the 12 regions. This report, which includes information from reports released earlier at the completion of individual phases, consists of two volumes. Volume I (titled Volume-Duration-Frequencies for Ungaged Catchments in Texas: Calculation of Regional Regression Equations) presents the regional regression equations developed, while Volume II (titled Volume-Duration-Frequencies Ungaged Catchments in Texas: Computations of Flood Volumes of Varying Durations and Frequencies for Catchments with Areas Greater than 300 Square Miles) lists the actual flood volumes computed for different duration-frequencies at all rural, unregulated sites that have at least 300 square miles of contributing drainage area.

DISCLAIMER

The contents of this report do not necessarily reflect the official views or policies of the U. S. Geological Survey or the Texas Department of Transportation. This report does not constitute a standard, specification or regulation. Certain limitations apply to use of equations developed in this report. Please read the limitations carefully. Equations used outside the range of the data used in their development is the sole responsibility of the user.

ACKNOWLEDGMENTS

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CHAPTER I

INTRODUCTION

1.1 THE PROBLEM

The magnitude and frequency of floods are an important consideration to society from two standpoints. First, from an engineering perspective, a knowledge of both is imperative in the design of embankments, culverts and other hydraulic structures. Second, from a socio-economic point of view, information of this nature is heavily relied on in the assessment of flood damages, establishment of flood insurance rates, and formulation of flood evacuation plans and land-use planning. Flood peak information becomes even more valuable when used in conjunction with the associated volumes. Design of reservoirs, drainage and storm water storage structures specifically requires this information. While peak and volume information are essential in the design process, a knowledge of duration of floods is also necessary to determine the time of inundation of structures such as roads and bridges in the event of large floods. A knowledge of flood volume-duration-frequency (VDF) relationships becomes all the more important at ungaged locations where watershed response is unknown. Further, prohibitive costs associated with over-design and high risks associated with under-design make regionalized VDF information very valuable.

VDF information is also needed to evaluate trade-offs, both social and economic, in the planning, design and execution of water resources projects. The size of these projects can range anywhere from the design of minor culverts on small streams to the design of giant dams across major rivers. VDF information is also useful for irrigation and drainage engineering, economic analyses and hydropower generation. Of late, mounting concern over water pollution has made flood volume information even more valuable to environmental studies. Pollutant discharges into streams and rivers need to be quantified adequately, particularly with new regulations such as the United States Environmental Protection Agency (USEPA)'s National Pollutant Discharge Elimination System (NPDES)

in force. Water quality is closely tied to water quantity, and to quantify the former a sound methodology is essential to estimate the latter.

The problem of extreme volume estimation for various durations can be divided into two components. First, flood volume must be estimated at gaged locations. A sound volume estimation technique needs to be formulated at gaged locations in order to identify and address potential problems with existing methodologies. The second component is the extension of extreme volume information to ungaged locations. Current techniques described below, can be used to achieve this second component. Both components are addressed in this research.

1.2 VOLUME ESTIMATION - CURRENT TECHNIQUES

Runoff volume is usually estimated by simulating watershed behavior for extreme rainfall events and integrating the area under the resulting hydrograph. Such an approach depends heavily on availability of suitable data on rainfall, soil type, land use and antecedent soil moisture condition, all of which are often not available in the desired quantity and/or quality. Inherent in rainfall-runoff modeling is the assumption that rainfall distribution is spatially uniform. However for Texas, it is known that rainfall distribution is not both temporally and spatially uniform. In a study on five gages (within 2 km. of each other) in a 10.4 km^2 catchment, Patrick and Stephenson (1990) observed that: "...the general shape of the hyetograph at each gage was almost random; starting and ending times of the same storm were different at each gage; peak intensities occur at different times; and peaks at one gage coincide with lows at another." Such variations are even more pronounced for larger catchments. Under such conditions, even weighting techniques such as the Theissen polygon method are of little use.

Volume estimation techniques currently in use are discussed separately for gaged and ungaged sites in the following paragraphs. The objective of this study is to identify a methodology that would enable extreme flood volume estimation without using rainfall data.

1.2.1 Gaged Sites

At gaged locations, flood volumes are estimated directly from records. At basins with adequate records, frequency distributions are fitted to the time series of flood volumes to evaluate extreme volumes. Where records are inadequate, information at adjacent and/or similar sites is used in conjunction with available records to construct time series and estimate extreme volumes. If, on the other hand, the hydrograph shape for these extreme events is desired, a different approach such as that developed by Snyder (Snyder, 1958) is adopted. Unit hydrographs are developed using available data. The shape of unit hydrograph (Snyder's) is defined by two time parameters, W_{50} and W_{75}. These are the widths of the unit hydrograph at 50% and 75% of the peak discharge levels. The objective is to preserve the general shape of the hydrograph. Occasionally, these widths are regressed with basin characteristics in addition to the peak discharges to develop regionalized relationships of the form (Texas State Department of Highways and Public Transportation, 1985):

$$W_x = a.(\frac{Q_p}{A})^b \qquad (1)$$

where   W is the hydrograph width, in hrs., corresponding to 'x' percentage

             (x is 50 or 75) of the peak discharge Q_p (in cfs.),

             A is the drainage area (mi.^{2}), and

             a and b are constants to be determined.

The hydrographs thus generated correspond to either a peak runoff or a rainfall intensity of specific recurrence interval. They represent the recurrence interval of neither the hydrograph shape nor the volume.

1.2.2 Ungaged Sites

Flood volumes at ungaged watersheds are estimated in two ways. First, regionalized regression equations that relate flood volumes (estimated at gaged locations) to basin and/or hydro-climatic characteristics are extended to ungaged watersheds. Secondly, volume is estimated as the area under the simulated extreme runoff hydrograph. The chief

drawback with the former approach is the lack of a duration component in the estimated volume. In other words, the approach gives a definite value for a 100 year flood volume but does not, for example, give any information about a 100 year-10 day flood volume. Attempts have been made to estimate and regionalize runoff volumes for specific durations and recurrence intervals (Natural Environment Research Council, 1975; Sherwood, 1992), but they are neither extensive nor generally available. The NERC (1975) approach relates the volumes for different durations to the mean annual instantaneous (or calendar day) flood. These ratios (called reduction ratios) are then plotted against durations to give reduction curves.

The other method, developed by Sherwood (1992), uses synthetic long term rainfall-runoff modeling to estimate the volumes for different durations. The largest runoff volume for each duration was determined for every water year, and a frequency distribution of these curves at each station was then calculated. Volume-duration-frequencies were then regionalized by multiple regression analysis using basin characteristics (Flood Regionalization Conference, 1991).

A technique commonly used to estimate extreme volumes is to develop peak-volume relationships of the form

$$V = a.Q_p^b \tag{2}$$

where V is the volume associated with a peak flow, Q_p, and a and b are constants to be determined (Craig and Rankl, 1978; Livingston and Minges, 1987). The exponent b usually has a value less than 1.

Volumes, V_T, for different recurrence intervals 'T', can thus be estimated from the corresponding peaks, Q_{P_T}, using equation (2) assuming that the recurrence intervals of the volumes are the same as those of peaks. The antecedent rainfall, soil moisture and other hydro-climatic conditions must be known to validate this assumption. The estimated volumes of runoff may differ significantly from the actual volumes (Sauer, 1989). The lack of agreement between measured and estimated volumes is primarily associated with inaccurate estimation of the exponent 'b.'

Various attempts have been made to overcome this problem. Notable among them are attempts to relate volumes to peaks in the log space by standardization techniques (Rogers, 1980, 1982; Rogers and Zia, 1982; Mimikou, 1983; and Singh and Aminian, 1986; Molfino and Cruise, 1990; Bradley and Potter, 1992). The standardized linear relationships developed by Rogers (1980, 1982), and subsequently used by others (Singh and Aminian, 1986), have met with substantial criticism from Mimikou (1983) and Hawkins and Pole (1989). Their concern was the possible introduction of spurious errors in the standardization procedure. Mimikou (1983), Hawkins and Pole (1989) and Molfino and Cruise (1990) explained the possibility of the introduction of such an error. Non-linearity of basin behavior was further demonstrated by Blazková (1992).

An extension of the previous technique is to use peak-volume relationships that include basin and/or climatic characteristics. The relationship takes the form:

$$V = a \cdot Q_p^b \cdot S^c \cdot A^d \cdot I^e \tag{3}$$

where V is the flood volume corresponding to a peak discharge of Q_p produced by a storm of intensity I. A is the area of the watershed with slope S, and a, b, c, d and e are constants to be estimated.

An example of the application of equation (3) can be found in a study by Perry (1984). Volumes estimated using this approach are the volumes under the entire hydrograph and not over specific intervals of time. Also recurrence intervals in question are not the true recurrence intervals of actual runoff volumes.

1.3 DRAWBACKS WITH CURRENT TECHNIQUES

Some of the drawbacks associated with individual methodologies have already been presented. A few additional drawbacks are summarized in the following paragraphs.

1.3.1 Linearity

Well established is the fact that rainfall-runoff phenomena are nonlinear. Linearity is usually assumed, as in the unit hydrograph theory, for mathematical simplicity (Kundzewicz and Napiorkowski, 1986). Owing to this assumption, runoff simulation, even with the use of adequate and quality rainfall data, is handicapped by the assumption

of linearity. As Kundzewicz and Napiorkowski (1986) rightly state, successful application of such linear models typically pertain to cases where accuracy requirements are not critical and valid only in applicable range of conditions.

1.3.2 Duration Aspect

The duration aspect is not addressed in most peak-volume relationships currently in use. The shape of the hydrograph clearly indicates that volume under the hydrograph is a function of both the peak and duration. It is therefore possible to have flows of different volumes for the same peak. Hence, when reference is made of volumes corresponding to peaks of specific recurrence intervals, they may not imply volumes of the same recurrence intervals. It is sometimes useful for design engineers to have a knowledge of the volumes of flow for specific durations rather than the total volume under the hydrograph (an example of such a requirement is determination of the time of inundation of structures such as bridges). Given only the flood peak, and sometimes the total volume, it is not always possible to compute partial volumes. For gaged watersheds, it is possible to estimate partial volumes of flow by simulating runoff hydrographs for extreme peaks using a suitable calibrated model with available data. For ungaged watersheds, however, it is not possible to adopt the same approach since data are not available. However, rainfall-runoff simulation has its own drawbacks which are further elaborated in this chapter.

1.3.3 Data Availability

Most rainfall-runoff models are single, independent event models. Thus, volumes of flow generated by multiple or non independent events can rarely be reproduced using such models. To overcome this problem, continuous simulation models have been developed. However, continuous rainfall and runoff data, at the same location and for the same event, are not normally available except at experimental watersheds. In the case of large watersheds, rainfall data must be available simultaneously along with runoff data at several locations.

Also, stream flow data for severe storms are sometimes unavailable owing to technical problems such as malfunctioning of the gage or the gage being washed away.

The latter is particularly true for small watersheds. Interpolation and subsequent reconstruction of the hydrograph are not always feasible, particularly if no records of the peak flow exist for that event. Data for these intensive storms is very critical in calibrating rainfall-runoff models especially when the objective is to simulate hydrographs for extreme events. Thus, non-availability of rainfall and runoff data at desired locations on a continuous basis for required lengths of time is a severe handicap in using these models for extreme volume estimation.

1.3.4 Recurrence Interval

In all the approaches cited above, the assumption of the same recurrence interval for peaks and volumes is highly questionable. For example, it is possible to have flows with smaller peaks producing larger volumes of flow by virtue of a larger time base of the hydrograph. Such discrepancies can be attributed to variation in the rainfall pattern, difference in storm duration and/or direction of storm movement. The antecedent rainfall, soil moisture and other hydro-climatological conditions must also be known to validate this assumption. For example, locally intensive storms can produce very high peaks without high volumes.

In the absence of adequate peak discharge information, synthetic design storms are used in conjunction with rainfall-runoff models to generate long term peaks. The assumption here is that the peak discharges have the same return period as the design storms. Volumes are then evaluated from the simulated hydrographs. The drawback here is that it is unlikely for the rainfall, peak discharge and the runoff volume to all have the same frequency of occurrence. Depending on the spatial and temporal distributions for a given probability of exceedance, a given rainfall event can produce a wide range of flows (Dooge, 1977). To overcome this obstacle continuous rainfall-runoff modeling is resorted to with the aid of historical data. However, most historic rainfall records have short lengths and estimates based on simulated stream flows tend to have high standard errors (Bradley and Potter, 1992).

Hence, volumes estimated using peaks of specific recurrence intervals are unlikely reflect the true recurrence intervals of the volumes.

1.3.5 Use of Flood Peak Information

For most methods, a knowledge of flood peaks is imperative in estimating flood volumes. [In the case of ungaged watersheds, the flood peak (of a specific recurrence interval) is itself an estimate from regionalized information]. Flood frequency curves for the state of Texas are currently being re-evaluated by the U. S. Geological Survey for the Texas Department of Transportation. These curves are only now being updated and are not available for our study. This study focused on developing a methodology to estimate flood volumes without relying on a prior knowledge of flood peaks.

1.3.6 Accumulation of Errors

Measurement errors in both rainfall and runoff data could add to the inherent model errors already accumulated in the parameter estimation and model calibration process. The magnitude of these errors is a direct function of the level of sophistication of the model chosen and the robustness of the parameter estimation techniques adopted. Furthermore, volumes generated by such techniques are synthetic volumes that may incorporate errors from data, and/or improper modeling principles, despite the merit of the model and the rigor of calibration. Also, errors associated with hydrograph generation are automatically transferred to flood volume computation. Where peaks of specific recurrence intervals are used to estimate volumes, the associated errors are transferred to the estimated volumes through peak-volume relationships. Extreme volumes at gaged locations are regressed with hydrograph and basin characteristics to develop regional re-gression equations to enable estimation of such volumes at ungaged locations. There is al-ways an associated, unavoidable, error inherent in these regression equations. As such, there is a further accumulation of errors associated with regression.

Despite their drawbacks, the methods discussed above give the best possible estimates of flood volumes in the absence of actual measurements. There remains a need to develop methodologies that either address, avoid or eliminate identified errors and omissions.

CHAPTER II

LARGE WATERSHEDS

2.1 METHODOLOGY

Volumes of flow can be estimated by integrating the area under the corresponding hydrograph. Flow volumes can also be estimated by multiplying the mean flow by the duration. For example, consider the hydrograph shown in Figure 1. If the mean discharge during an interval 'Δt' is Q_m,
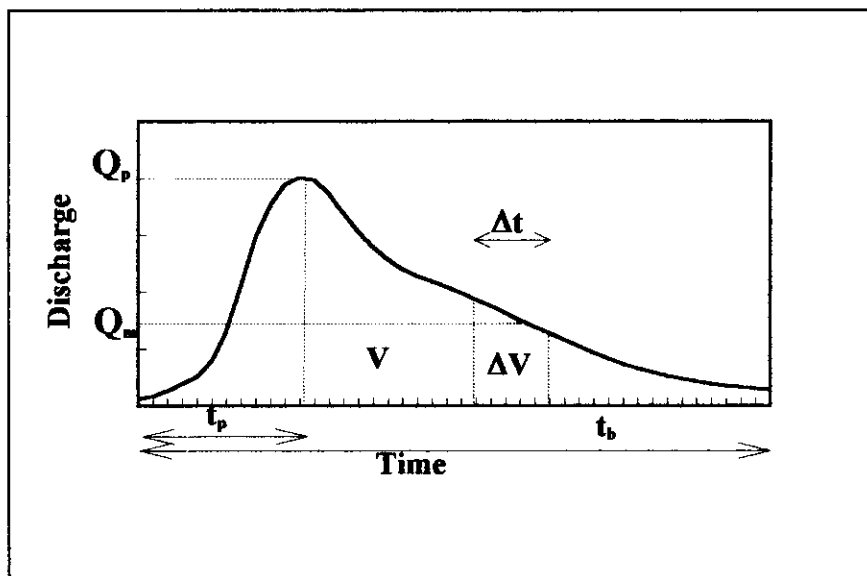
Figure 1. A typical single event hydrograph.

the corresponding volume during the same interval can be computed by:

$$\Delta V = Q_m \cdot \Delta t$$

(4)

The total volume V can be obtained by aggregating the individual volumes over all intervals 'Δt', through the total duration of the hydrograph, 't_b,' as shown below:

$$V = \sum Q_m \cdot \Delta t \tag{5}$$

or, $V = \sum \Delta V \tag{6}$

Thus, the total volume V under the hydrograph can be very easily computed by aggregating the individual daily volumes. Similarly, partial volumes of flow over desired durations, for example 2, 3, or 4 days (or 48, 72 and 96 hours respectively), can be estimated simply by aggregating the volumes over the respective durations. The inherent assumption here is that the maximum daily volume is the same as the maximum 24 hour volume. Also worth noting is the fact that the flood volumes computed in this manner include the base flow. In other words, they are total volumes and not volumes of the direct runoff. In the case of large watersheds, the base flow contribution may be significant. The feasibility of computing the annual maximum flow volumes over different durations is very obvious from the above description. Records of daily mean flows are readily available at most monitored sites. The choice often is between longer but less accurate records versus shorter but more accurate records. The former is the obvious choice in the area of flood forecasting.

Computing flood volumes directly from flow records is more appealing than resorting to rainfall-runoff modeling to estimate flood volumes because it is a rather direct approach. The introducition of errors associated with poor quality data and/or modeling is tremendously reduced by this approach.

In the case of large watersheds, runoff is usually spread over several days, and daily volumes of flow can be computed using the daily means. Thus, there exists a possibility of compiling a time series of maximum daily volumes at any gaged location through the entire period of record using daily means. This option enables volume determination without a prior knowledge of flood peaks. Based on a survey of literature, it appears that all previous flood volume-duration-frequency studies done (in a regionalization

context) have utilized flood peak information. This study however, does not rely on information about flood peaks.

Our underlying philosophy is that the response of medium and large watersheds is spread over several days and the daily-means are good estimators of daily volumes. Also, fluctuations in the watershed response during a 24-hour period do not materially affect daily volumes in watersheds of this size. This procedure is obviously useful only in the case of those watersheds that have response times larger than 24 hours. Flood volumes over smaller durations (few hours) are not always as critical as flood volumes over longer durations (several days) in the design of most hydraulic structures.

The procedure used in this research is simple and straight forward. First, a time series is constructed for the annual maximum volumes of flow for various durations at each gaged location. Next, a probability distribution is fit to this time series to enable estimation of extreme volumes of flow. Finally, these extreme volumes at all gaged locations are regressed with basin and hydro-climatic characteristics to develop regional relationships.

2.2 DATABASE

The idea of using the daily means in this study stems from the fact that the United States Geological Survey (USGS) maintains a huge database of the daily mean discharges at several thousand locations throughout the country. The data base for the state of Texas alone includes daily mean flows at several hundred locations. Appendix I lists stations in Texas for non-urban, unregulated watersheds with daily mean discharge data. [In a hydrologic sense, non-urban watersheds are defined as those that have less than 10 percent impervious cover. Unregulated watersheds are defined as those that do not contain control structures that affect peak flow]. However, only a subset of these stations were used in this research owing to factors such as inadequate period of record. A pilot study, described below was conducted to ensure that the methodology discussed earlier is indeed feasible. Also, the durations over which flow volumes need to be com-

puted are to be determined. The pilot study identified sites that could be successfully used in this research.

2.2.1 Pilot Study

The pilot study involved a preliminary analysis of available data (Valdés and Devulapalli, 1993). There are 671 gages in the state of Texas that cover non-urban, unregulated watersheds. Of these, only 465 gages have daily-mean flow data available. The watersheds covered by these gages range in size from less than one square mile to over 176,000 square miles. The period of record at these sites ranges from 1 to 75 years. It was necessary to identify those watersheds that have a substantial period of record to do meaningful analysis. The watersheds are thus categorized into three groups based on their period of record i.e. 10, 15 and 20 years. Figures 2-7 show the distribution of these watersheds based on size and location. While figures 2, 4 and 6 show the cumulative percentage of watersheds as a function of the drainage area, figures 3, 5 and 7 show the spatial distribution of these watersheds throughout the state for all three categories.

The data were analyzed in great detail by looking at the number of gages for various combinations of period of record and drainage area. This analysis revealed that there are 373 stations with a data record of at least 8 years. This study focussed on watersheds at least 300 square miles in area with a minimum of 8 years of record (Slade, 1993). Appendix II lists all the 207 gages that meet these two criteria. The criteria for selecting watersheds that are at least 300 square miles in area will be discussed later in Chapter IV.

The second part of the pilot study concerns identifying the durations over which flow volumes are to be estimated. Thirty eight watersheds of various sizes, along with their basin characteristics such as drainage area, basin shape, elongation ratio and rotundity, were chosen for the pilot study. The daily means of flow at these gages for the entire period of record were also compiled. A computer program, VOLFOR, was developed (Appendix III) to read the daily means and estimate the daily volumes.

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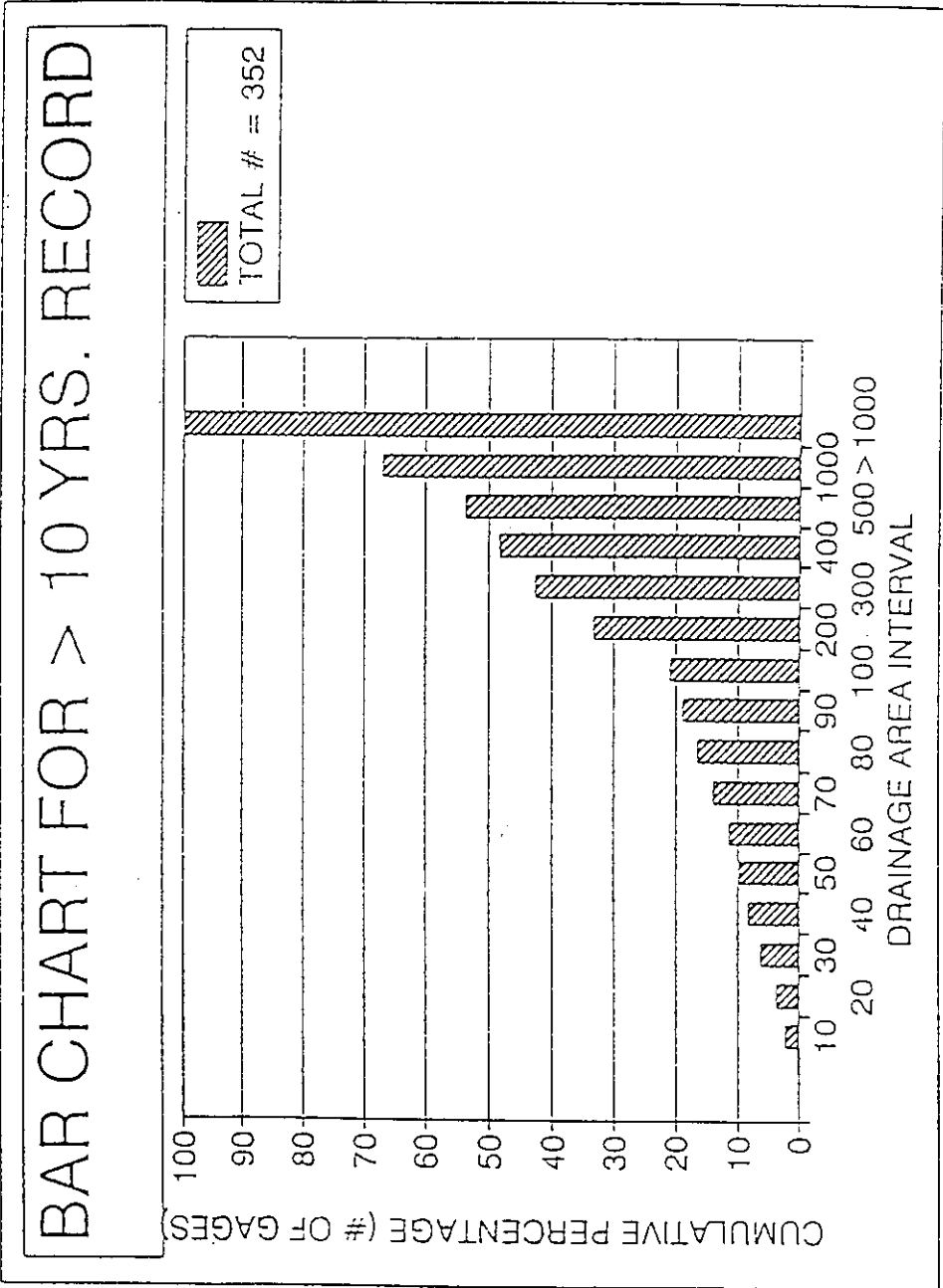
Figure 2. Histogram of cumulative percentage of number of watersheds with at least 10 years of data, as a function of drainage area (in mi.²).

Locations of streamflow-gaging
stations with at least 10 years
of daily-value flow data
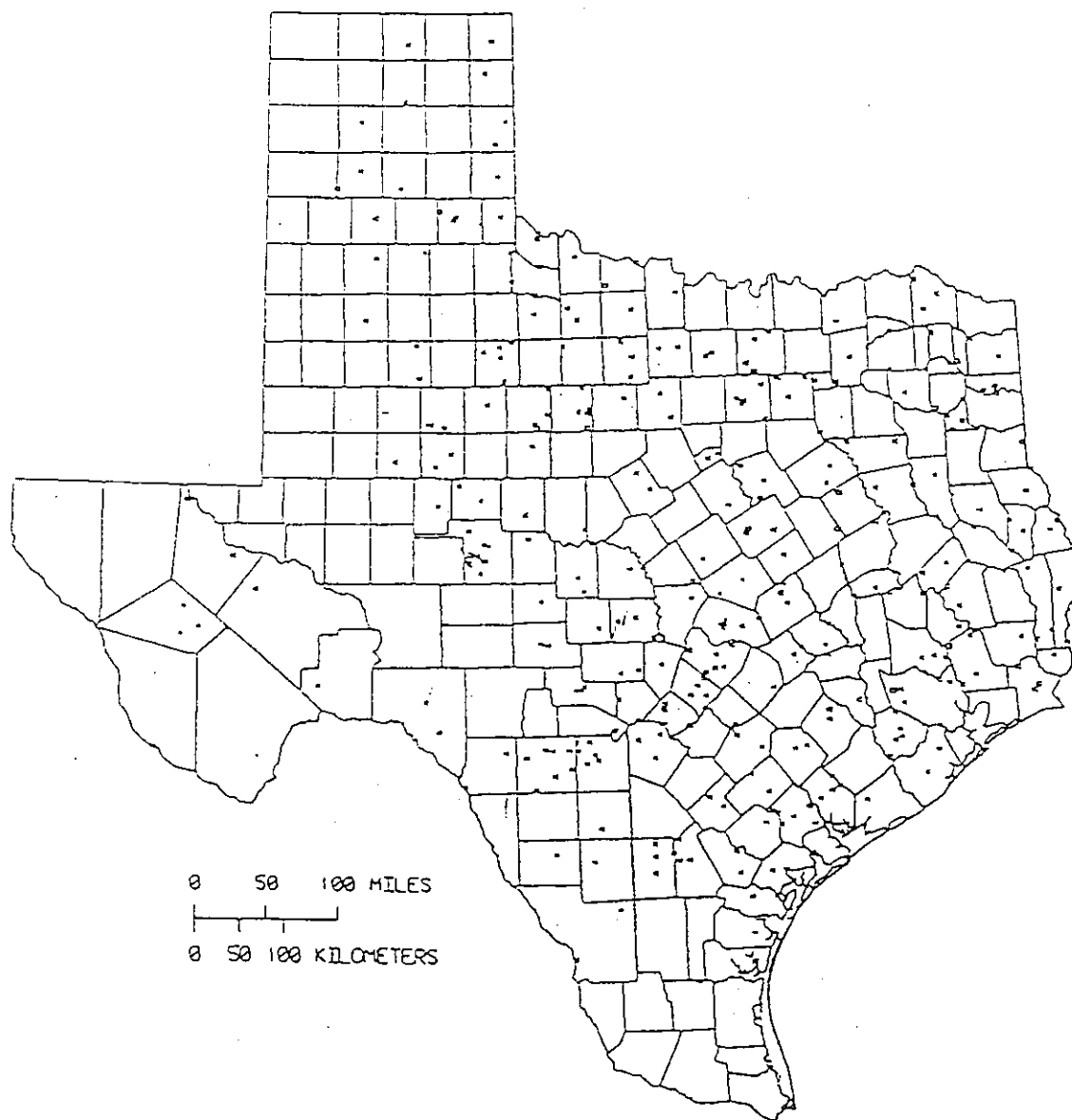
Figure 3. Spatial distribution of watersheds with at least 10 years of data
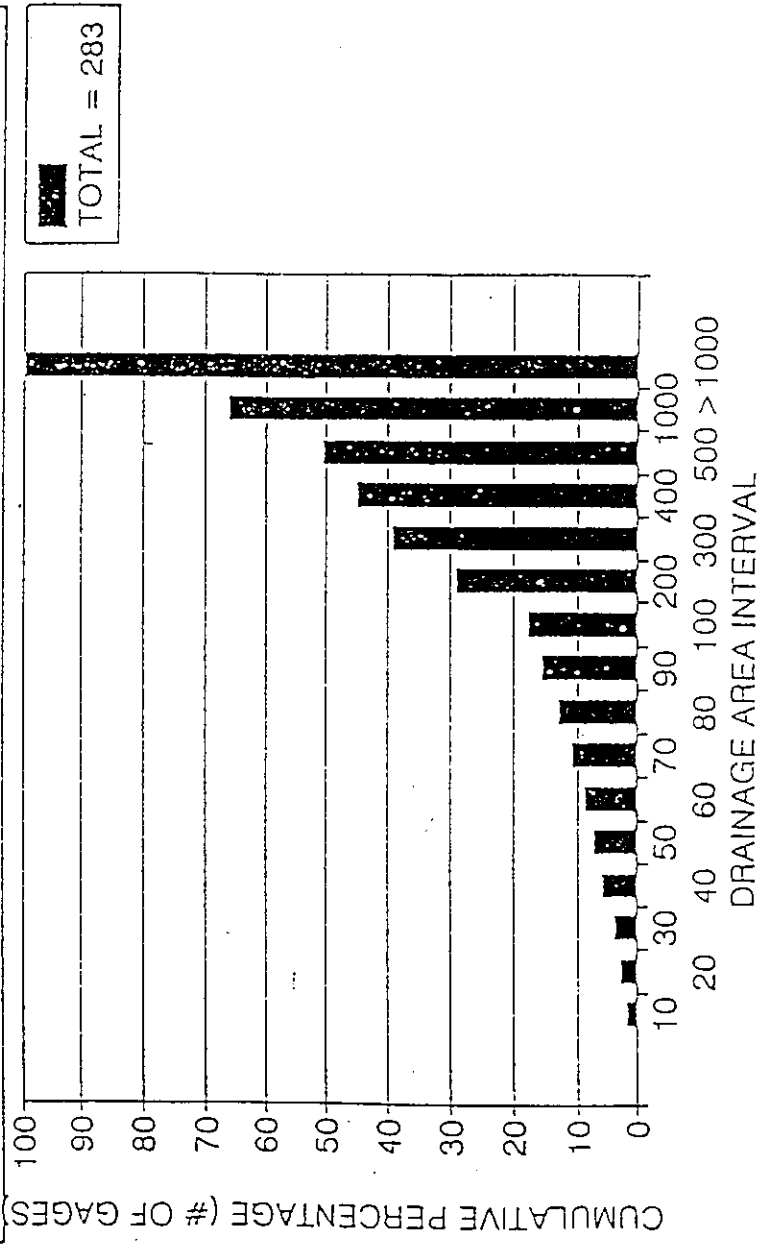
Figure 4. Histogram of cumulative percentage of number of watersheds with at least 15 years of data, as a function of drainage area (in mi.^{2}).

Locations of streamflow-gaging
stations with at least 15 years
of daily-value flow data
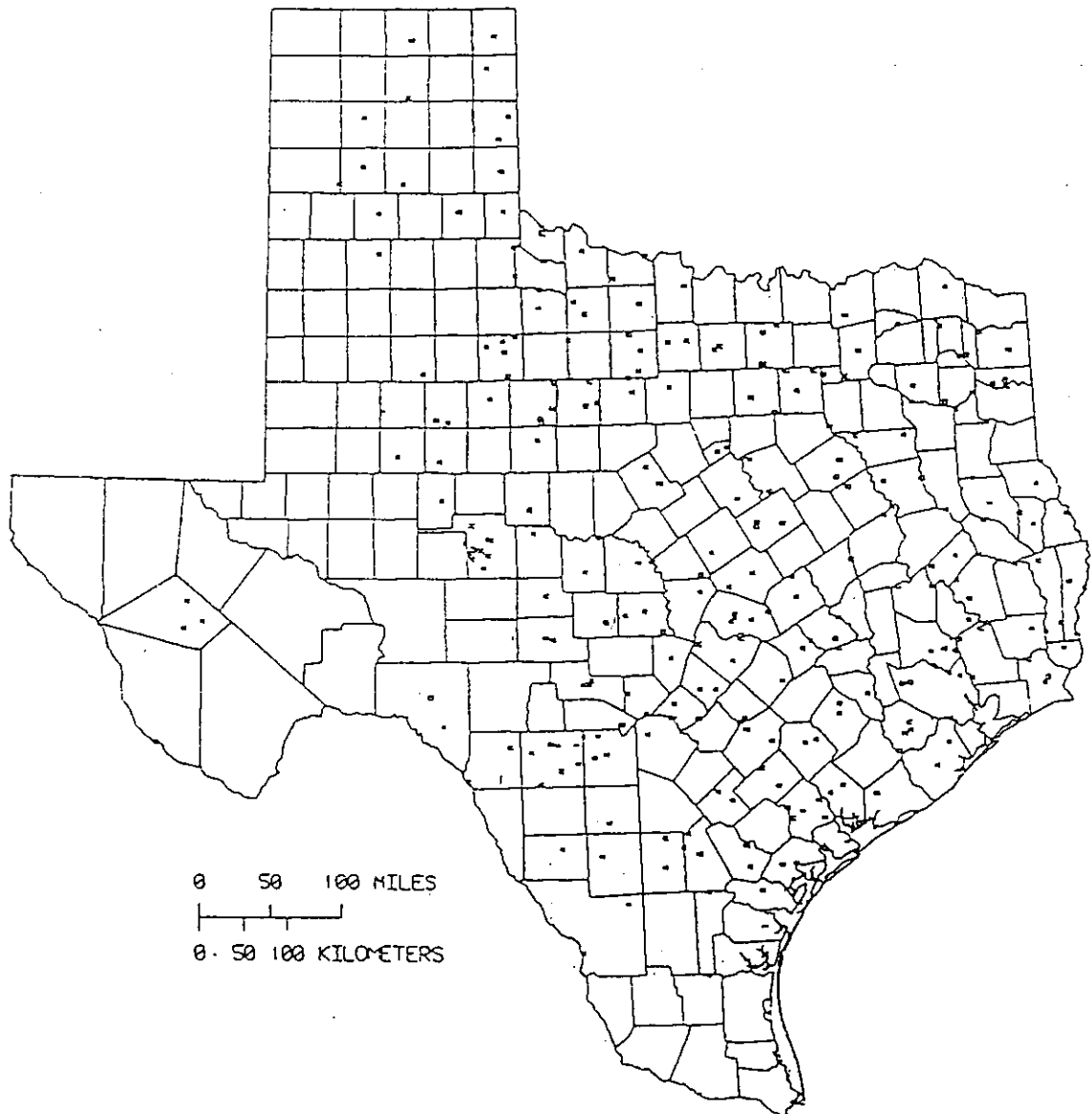
Figure 5. Spatial distribution of watersheds with at least 15 years of data
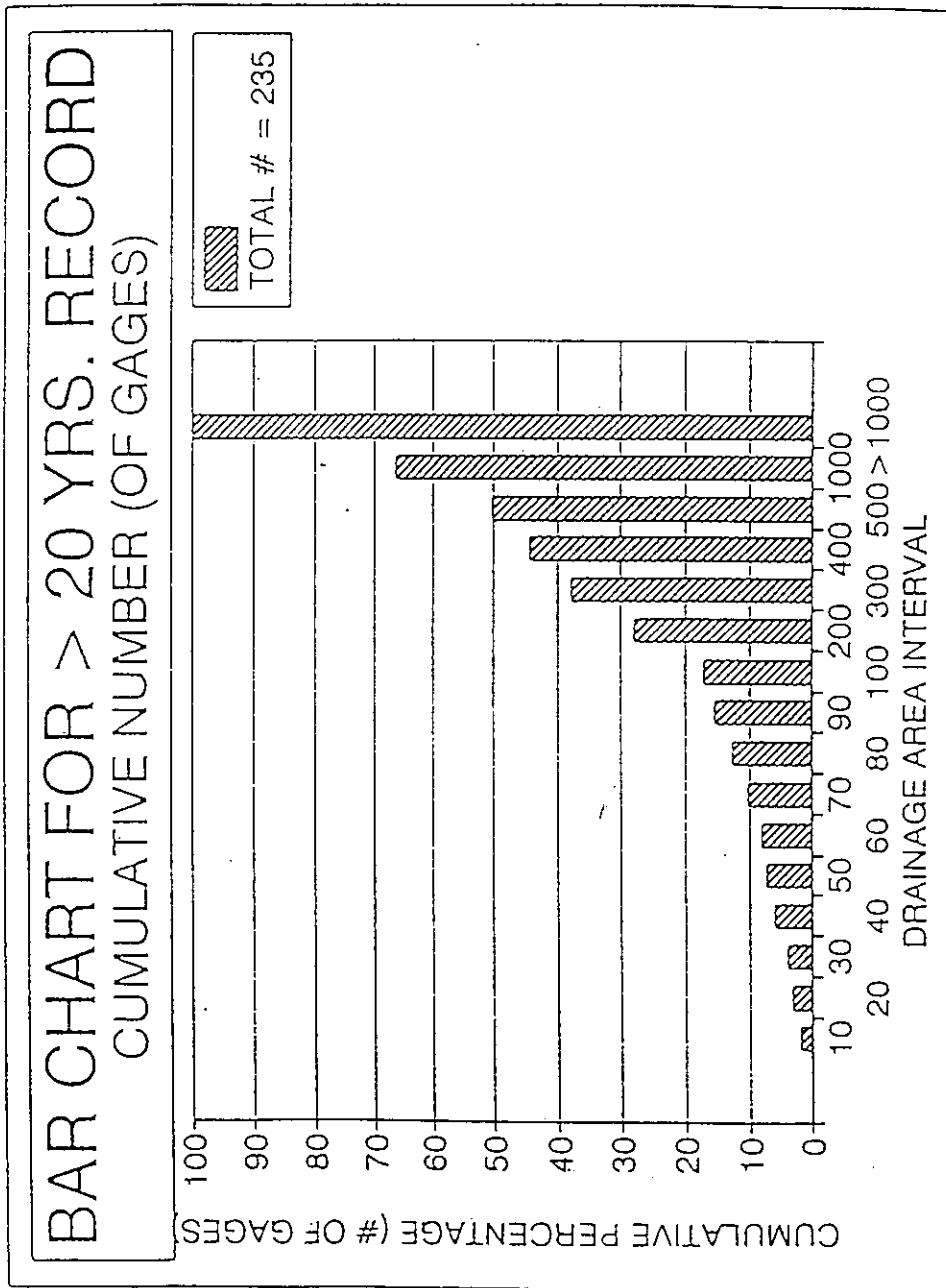
Figure 6. Histogram of cumulative percentage of number of watersheds with at least 20 years of data, as a function of drainage area (in mi^2).

Locations of streamflow-gaging
stations with at least 20 years
of daily-value flow data
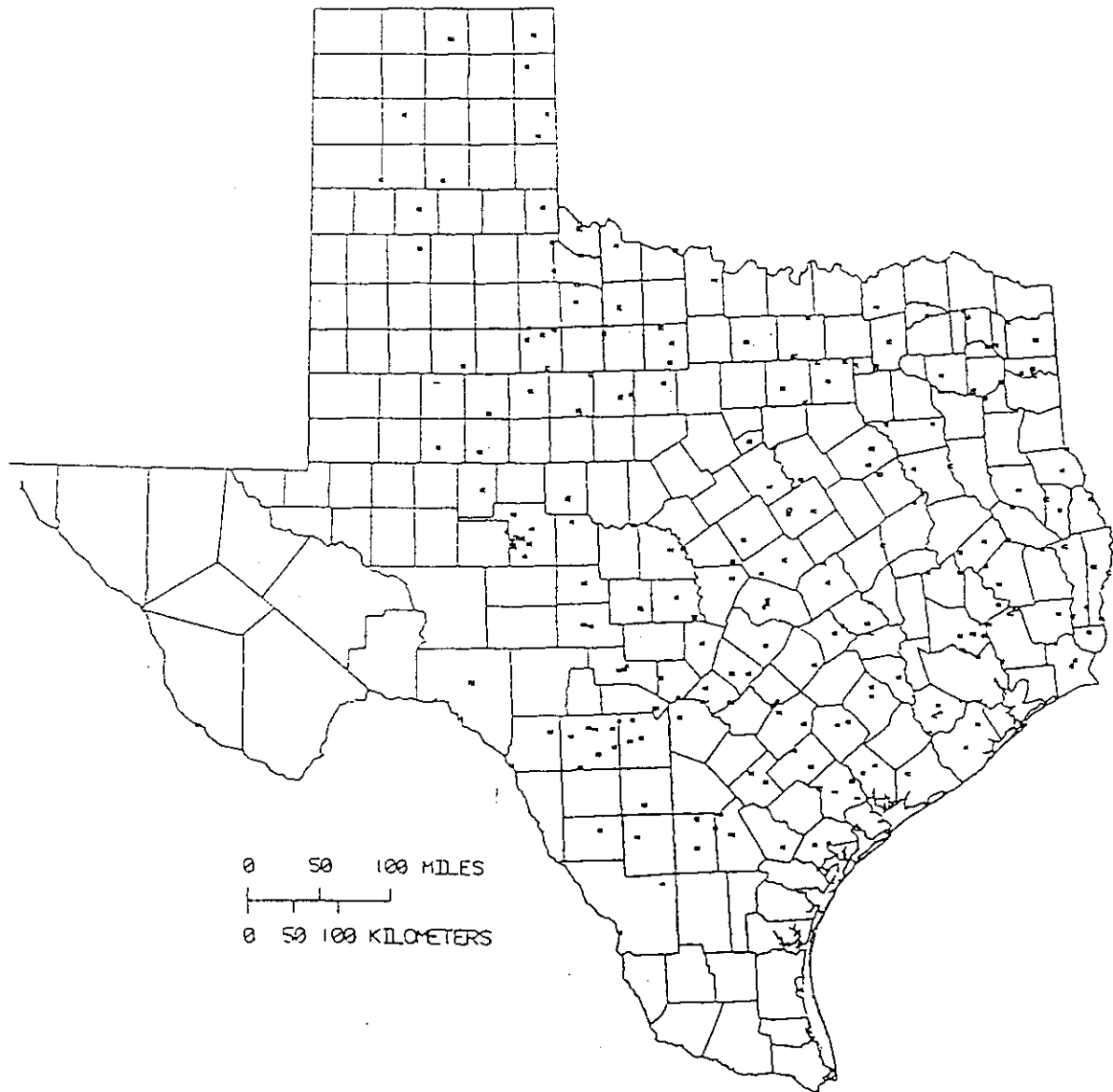
Figure 7.   Spatial distribution of watersheds with at least 20 years of data.

The volumes were then aggregated over 2, 3, 4, 5, 6, 7, 8, 9 and 10 days. The program then identified the annual maximum for each duration through the entire period of record. This step was repeated for all thirty eight watersheds. Thus 10 time series comprising of the annual maximum volumes of flow for 10 different durations were developed for each site. Log-Pearson type III distribution were then fitted to each of the time series at each site in accordance with procedures outlined in Bulletin 17B (U. S. Water Resources Council, 1981). Extreme volumes were estimated for each duration. Extreme value type I (Gumbel) distributions were also fitted to each of the series to estimate extreme flow volumes. A software package called Z-PLOT was used to plot flow volumes for different durations and for different recurrence intervals for all 38 watersheds. A few of these plots are shown in Figure 8. A visual examination of the plots at all the thirty eight watersheds revealed that the 2, 3, 5 and 10 day durations to be most significant. Volumes corresponding to the rest of the durations were found to lie very close to some of these durations.

The pilot study allowed us to conclude that the daily means are good estimators of flood volumes and it also allowed us to determine the number of watersheds and durations to be included in the broader study.

2.3 PROCEDURE

Volumes for different durations and recurrence intervals were estimated in exactly the same manner as described in the pilot study. The following three steps briefly summarize the procedure:

1. Compile a time series of annual maxima of flow volumes for different durations at each site.

2. Estimate volumes for different recurrence intervals (for each duration) at individual locations using Log Pearson type III distribution.

3. Regionalize the estimated volumes to enable estimation at ungaged locations.
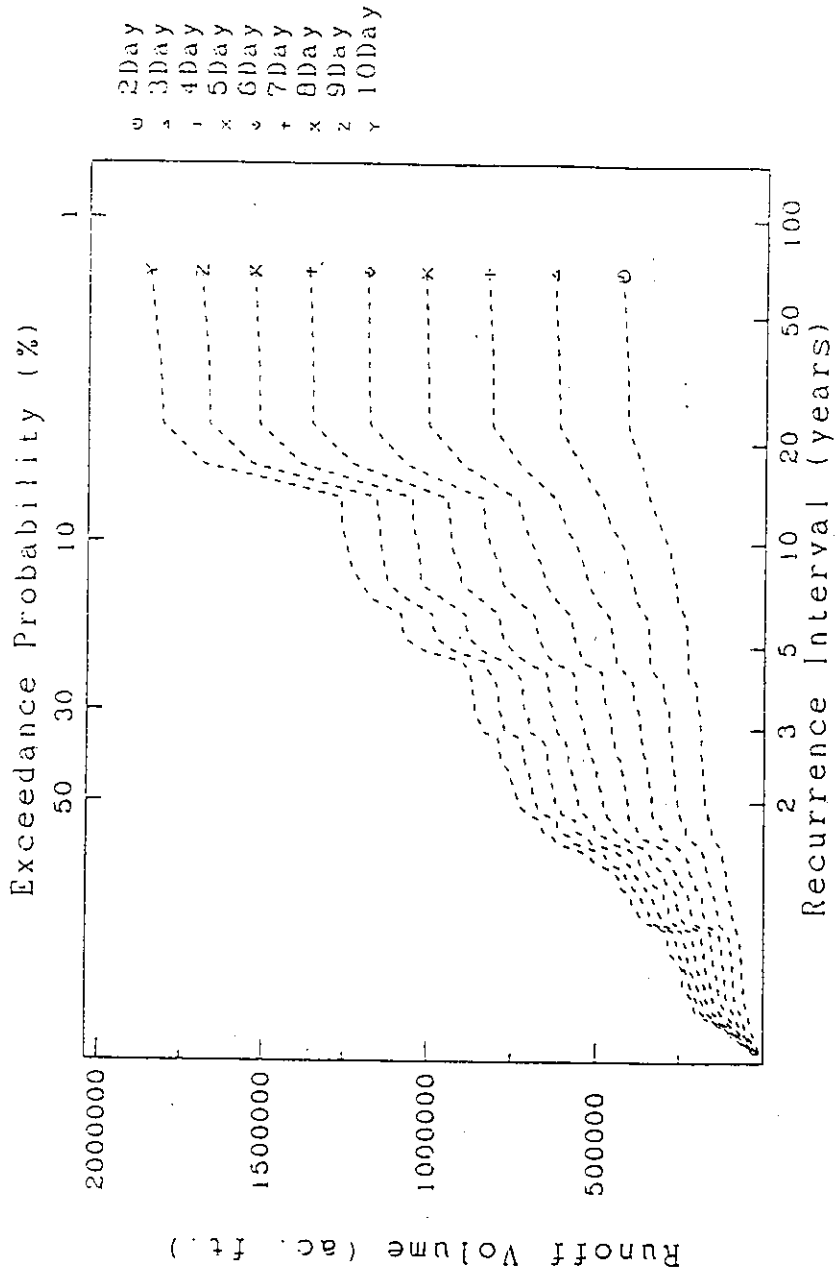
Figure 8. Gumbel plot of flow volumes for corresponding probabilities for durations of 2 through 10 days at gage # 8066500 (17186 mi.^{2}).

Although the above three steps broadly outline the procedure adopted, the detailed procedures are discussed under two categories: gaged and ungaged watersheds.

2.3.1 Gaged Watersheds

The computer program developed in the pilot study was suitably modified and used to read the daily flow information and compute corresponding daily volumes. For each station, the program reads the data, identifies the annual maxima of daily means in each year and constructs a time series for the entire period of record. The program then aggregates the daily means over different durations between 1 and 10 days and constructs time series of annual maximum flow volumes for each of the individual durations. In the process, the program also accounts for leap years for inclusion in the aggregation process. The time series were then examined for extremely low values, and those found to contain extremely low values because of partial records were eliminated for the entire year. Consequently, the period of record listed in Appendix I will not agree with the actual period of record used at some sites.

Statistics of individual time series were then computed. The Log Pearson III values for extreme events were estimated for each time series in accordance with the U. S. Water Resources Council (1981) guidelines.

2.3.2 Ungaged Watersheds

The volume-duration-frequency information was regionalized through multiple regression with basin and climatic characteristics. The characteristics evaluated for use as independent variables in the regression equations were: contributing drainage area $(mi.^2)$; channel length (mi.), main channel slope (ft/mi.), shape, 2 year-24 hour precipitation (in.) and the mean annual precipitation (in.).

The independent variable was the flow volume (for different durations-recurrence intervals), in ac-ft. Units of measurement of the characteristics are as indicated above and were used throughout this study unless otherwise stated.

An earlier study (Schroeder and Massey, 1977), defined six flood frequency regions for Texas (Figure 9). These regions were defined based on the distribution of residuals

HYDROLOGIC REGIONS
IN TEXAS
FOR 1976 U.S. GEOLOGICAL SURVEY
DISCHARGE - FREQUENCY CURVES
///// UNDEFINED REGION.
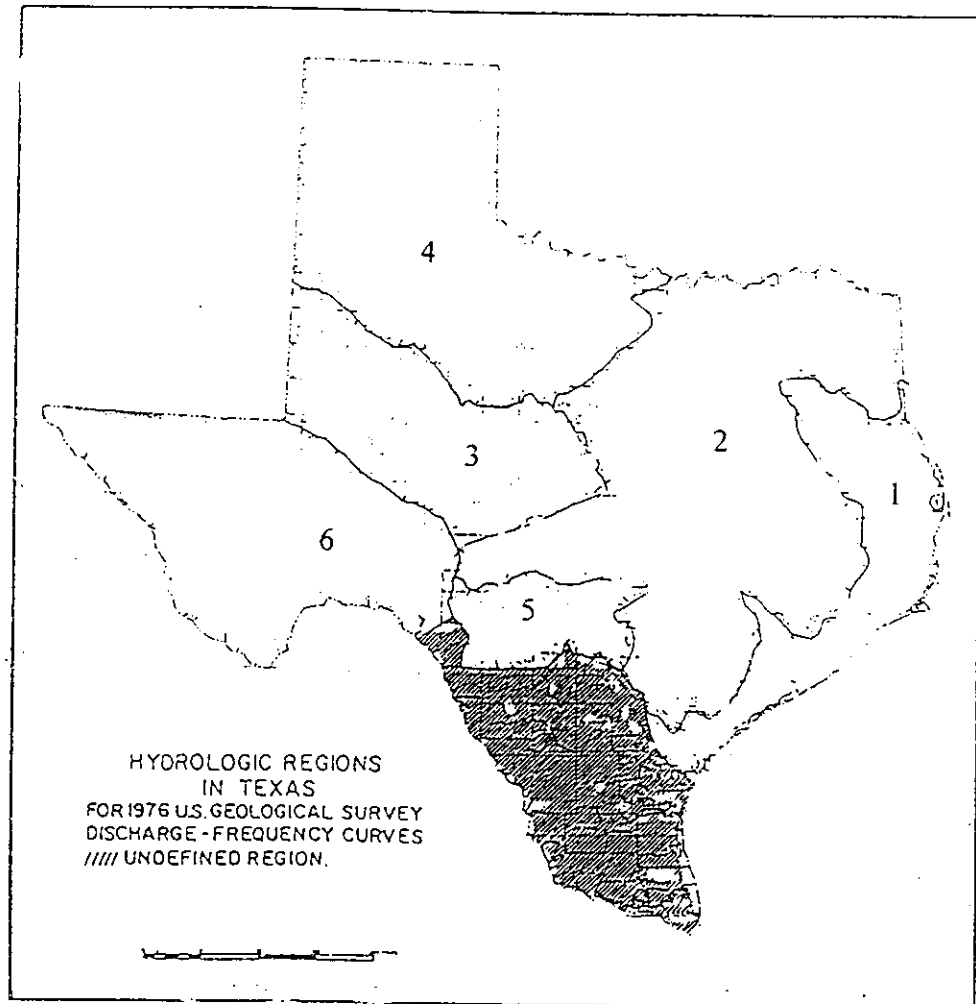
Figure 9. Six flood frequency regions defined in an earlier study (Schroeder and Massey, 1977).

from a single statewide regression of the 10-year flood. When the database was examined in conjunction with these six regions, we found that the distribution of gages varied widely among regions as shown in Table 1.

We chose to use more compact regions and hopefully add strength to the regression equations. Twelve such regions were defined for the peak-frequency study (Slade, 1994) currently underway at the U. S. Geological Survey. It was decided to adopt the same twelve regions in this study for two reasons. First, to ensure consistency in the use of regions for flood peak-frequency and volume-duration-frequency information throughout the state. Secondly, the basis for the development of these 12 regions was rigorous and included many variables. Regions defined in other related works (Carr, 1967; Keir et. al., 1977; Fenneman and Johnson, 1946; and Fenneman, 1931 and 1938) were studied in addition to those developed by Schroeder and Massey (1977).

Table 1. Distribution of drainage basins in the six old regions.

Region Number	Number of Gages
1	21
2	93
3	22
4	43
5	9
6	6

Considerations such as physiography, geology, soils, vegetative cover were taken into account in the development of these twelve regions. In addition, factors such as density of the location of sites, drainage basin divides in the case of large basins, patterns of climatology, and the shape of the state were also taken into consideration.

The 12 flood frequency regions are shown in Figure 10. The quantitative distribution of these gages is shown in Table 2. In the analysis of data from each region some of the stations are treated separately for the following reasons:

1. Some of the watersheds represented by these stations are too large and do not necessarily lie entirely within one region.

2. Owing to their size, they include some of the smaller watersheds that are al- ready included in the development of the regression equations. Response at these watersheds would therefore reflect the collective response of the component sub-watersheds.

The regionalization of these flood volumes for different frequency-durations involved a variety of different issues and is included as a separate topic for discussion.

Table 2. Distribution of gaged sites in the 12 new regions.

Region Number	Number of Gages	Region Number	Number of Gages
1	17	7	22
2	6	8	11
3	29	9	17
4	31	10	23
5	17	11	10
6	11	12	9

2.4 REGIONALIZATION

Extreme flood volumes (for different duration-frequencies) were compiled for all the gages within individual regions along with the respective hydro-climatic information. The procedure adopted to regionalize this information is described in the following sections.

2.4.1 Regression Analysis

A pc based statistical package, MINITAB (Minitab, Inc., 1993) was used to perform regression analyses. Stepwise regression was performed to select the best predictors in each case.
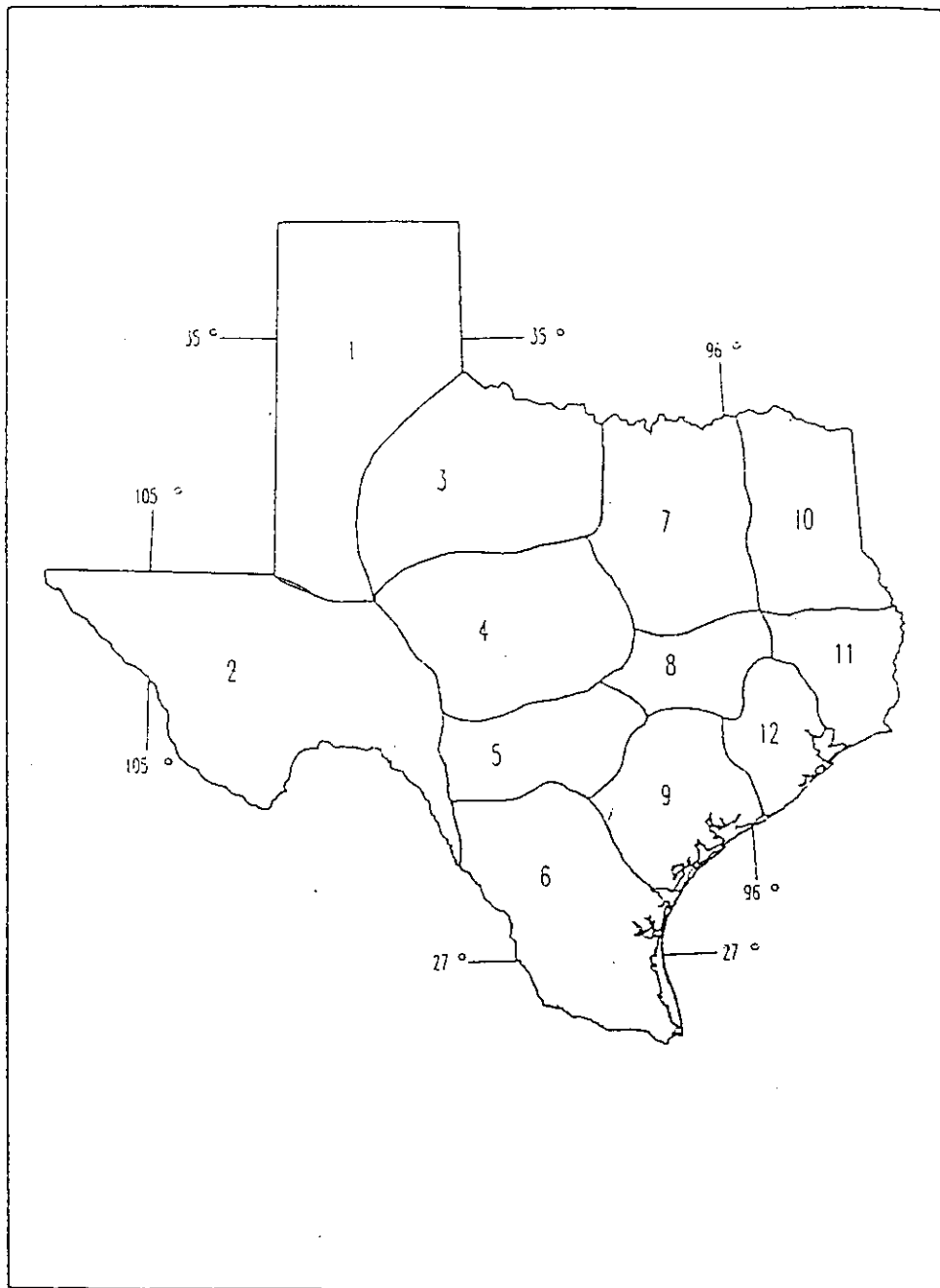
Figure 10. Twelve flood frequency regions defined in a new study (Slade, 1994).

In developing the individual regression equations, it was assumed that the runoff volume was a non-linear function of the basin and climatic characteristics. Hence, the regression model chosen had the general form:

$$V_{D,T} = \alpha \cdot A^{\beta} \cdot S_l^{\gamma} \cdot S_h^{\delta} \cdot L^{\varepsilon} \cdot P_{2,24}^{\eta} \cdot P^{\lambda} \qquad (7)$$

where: $V_{D,T}$ is the 'D' day(s) runoff volume having a recurrence interval 'T' years; A is the contributing drainage area; S_l is the slope; S_h is the shape; $P_{2,24}$ is the 2 year-24 hour rainfall; P is the mean annual precipitation; and α, β, δ, ε, γ, η and λ are parameters to be estimated.

In order to obtain a linear regression model, logarithmic transformation of the data was performed by taking logarithms on both sides of equation (7). The resulting linear equation is of the form:

$$log\, V_{D,T} = log\, \alpha + \beta \cdot log\, A + \gamma \cdot log\, S_l + \delta \cdot log S_h + \varepsilon \cdot log L + \eta \cdot log\, P_{2,24} + \lambda \cdot log\, P \quad (8)$$

Although other transformation forms exist, such as multiplicative, exponential and reciprocal (Draper and Smith, 1981), the logarithmic transformation was chosen because of its widespread use in hydrology.

The procedure followed in the regression analysis of one case, i.e., Region 1, 1 Day Volumes is illustrated in this chapter as an example. Similar procedures were adopted for all regions for all durations-frequencies of flood volumes.

REGION 1

Duration: 1 day; Recurrence Interval: 100 years.

Region I contains 17 gaging stations. All 17 stations, along with their basin and climatic characteristics, and Log Pearson Type III volume estimates were stored as a MINITAB worksheet. The predictors used in the regression analyses were abbreviated as listed in Table 3 and are listed accordingly in all of the MINITAB output.

Table 3. Abbreviations used for variables in the regression process.

Variable	Abbreviation
Contributing Drainage Area	A
Basin Length	L
Basin Shape	S_h
Basin Slope	S_l
2 yr, 24 hour Precipitation	$P_{2,24}$
Mean Annual Rainfall	P
'T' year volume over 'D' day(s)	$V_{D,T}$

2.4.2 Correlation Matrix

The correlation matrix (Pearson product moment) of the variables was first examined to identify correlations between the independent variables. The correlation matrix for this case is tabulated in Table 4.

Table 4. Correlation Matrix of basin and climatic characteristics in Region 1 for 1 Day Volumes.

	$P_{2\,24}$	P	A	L	S_h	S_l
P	0.904					
A	-0.056	-0.219				
L	-0.384	-0.184	0.874			
S_h	-0.631	0.570	0.484	0.848		
S_l	0.439	0.627	0.282	-0.025	-0.352	
V1	0.162	0.406	0.849	0.633	0.216	0.514
V2	0.258	0.497	0.850	0.564	0.088	0.544
V5	0.241	0.495	0.870	0.573	0.083	0.551
V10	0.199	0.466	0.887	0.599	0.112	0.549
V25	0.118	0.401	0.898	0.641	0.176	0.534
V50	0.043	0.335	0.892	0.670	0.235	0.511
V100	-0.036	0.259	0.870	0.691	0.297	0.477
V200	-0.114	0.179	0.833	0.701	0.355	0.436

2.4.3 Choosing the Best Subset

The best subset option of MINITAB was chosen to determine the best possible subset of the variables to be included in the regression. The output from this step is show in Table 5. 'Vars' in the output indicates the number of variables selected at each step. The R^2 for the regression equation with 'Vars' number of variables in the equation is listed in column 2 of Table 5. However, in regression, the value of R^2 increases with an increase in the number of variables. Hence, an adjusted R^2 value is computed for each set to reflect the true R^2 of the equation. The C_p is a test statistic computed as (Mallows, 1973):

$$C_p = \frac{SSE_p}{MSE_m} - (n - 2p) \qquad (9)$$

where, C_p is the test statistic; 'n' is the number of data sets;

SSE_p is the error sum of squares for the best model with 'p' parameters; and

MSE_m is the error mean of squares for the model with all 'm' parameters.

The fifth column in the output gives an estimate 's' of the standard deviation about the regression line. The contributing drainage area 'A' has been forced into all models.

The C_p statistic, originally proposed by Mallows (1979), is a valuable tool in the evaluation of the individual variables. The combination of variables that results in a C_p statistic that is nearly equal to 'p', the number of parameters in the model, is normally considered indicative of a good subset of variables for the model. Based on the output in Table 5, it can be seen that A and S_1 provide the lowest C_p value while maintaining a comparable R^2 value. The standard deviation is also the lowest among all combinations tested. Hence they are identified as the most likely variables to be used in the regression equation. Occasionally, adding a variable to a regression equation may not improve the R^2 value but might reduce the standard deviation significantly, in which case the variable is included in the equation. Choice of variables therefore involves a close examination of a combination of all three parameters: C_p; R^2; and the standard deviation 's.'

Table 5. Output from the best subset option using Minitab (drainage area 'A' is forced into all models).

Vars	R-sq	Adj. R-sq	C-p	s	$P_{2,24}$	P	S_h	S_l
1	81.50	78.10	1.0	0.1654				X
1	77.00	73.60	2.9	0.1817			X	
2	82.90	77.70	2.3	0.1671	X			X
2	82.40	77.10	2.6	0.1692		X		X
3	83.60	76.30	4.0	0.1724	X		X	X
3	83.20	75.80	4.2	0.1741		X	X	X
4	83.60	73.30	6.0	0.1828	X	X	X	X

2.4.4 Stepwise Regression

Although the best subset test identifies the best possible subset of variables to be chosen for the model, it is by no means definitive for variable selection. Other methods such as stepwise regression were also adopted to identify variables to be used in the final model. All three approaches to regression were addressed, namely, forward substitution, backward elimination and the stepwise methods. Forward selection and backward elimination are special cases of the stepwise regression process. In the stepwise regression process, the program calculates the 'F-statistic' for each variable at each step in model development. The 'F-statistic' is computed as the ratio of the Mean Square Term to the Mean Square Error (MST/MSE). If it is determined that the computed 'F-statistic' of any variable is less than 'F_{remove},' a pre-established threshold, then the variable is removed from the model. If no variable can be removed, the procedure tries to add a variable. An 'F-statistic' is computed for each variable not yet in the model. The variable with the largest 'F-statistic' is added to the model provided it is greater than 'F_{enter},' another pre-established threshold. Choosing a variable this way ensures choice of the variable with the largest partial correlation or in other words, a variable that reduces the sum square of errors the most. The procedure terminates when no variable can be deleted /added to the model.

The square root of the 'F-statistic' is the 't-statistic,' listed next to each of the variables in the model. The MINITAB output does not list the observed significance level 'α,'of the test. Consequently, one must compare the computed 't' values with critical 't' values (from any standard text on Statistics).

Output from the stepwise method is shown in Table 6. As the table shows, the program identified 'A' as a possible variable in the model. The stepwise procedure is further continued by forcing slope into the equation. It can be noted from Table 6 a and b, that slope was rejected as a possible variable in the model in step 3.

Table 6. Output from stepwise regression on variables.

Stepwise regression of V_{100} on 6 predictors, with N = 14	
N(cases with missing obs.) = 3 N(all cases) = 17	
STEP	1
Constant	1.951
'A'	0.88
t-ratio	6.11
s	0.182
R-sq	75.66

Table 6 (cont'd).

SUBC> enter 'slope'.		
STEP	2	3
CONSTANT	1.057	1.951
'A'	0.80	0.88
t-ratio	5.91	6.11
'S_1'	1.10	
t-ratio	1.86	
s	0.165	0.182
R-sq	81.51	75.66

2.4.5 Forward Selection

The forward selection method essentially consists of sequentially adding variables, one at a time until the regression equation is satisfactory (Draper and Smith, 1981). The order of introducing variables is determined by the magnitude of the partial correlation coefficients. The variable with the largest simple correlation with the dependent variable is introduced first. Subsequently, the independent variable with the largest partial correlation that increases the R^2 value more than any other single variable and having the largest F or t statistic of the variables not in the model is added. In the case of Region I, the forward selection and the stepwise methods produced the same result (Table 6).

2.4.6 Backward Elimination

This procedure starts by including all the variables in the model and eliminating those that have the lowest F value, one at a time. The output obtained using this method is the exact same as the one obtained using the Forward Selection and Stepwise Techniques (Table 6). The best alternates for Region I are tabulated in Table 7.

Table 7. Best alternate variables for regression (Region 1, 1 Day, 100 year Volumes).

Stepwise regression of V_{100} on 6 predictors, with N = 14	
N(cases with missing obs.) = 3 N(all cases) = 17	
STEP	1
CONSTANT	1.951
'A'	0.88
t-ratio	6.11
s	0.182
R-sq	75.66
best alt.	
VARIABLE	t-ratio
'L'	3.30
'S$_l$'	1.88
'S$_h$'	1.08
'P'	0.93
'P$_{2,24}$'	-0.12

It can be seen that the contributing drainage area 'A' has the most influence, among all the variables chosen, on the 100 year volume. The next best predictors are the basin length and the slope. However, from Table 4 we notice that the contributing drainage area, A, and the basin length, L, are strongly correlated (0.871) and they cannot both be used in the same equation to predict the volume since, together, they tend to give redundant information. When highly correlated variables are used in model development, they tend to produce contradictory results. Slope, 'S_l,' however has very low correlation with the area (0.282) and can be used as an additional predictor to see if it results in any significant improvement in the regression model. Mean annual rainfall, 'P', and the 2 year-24 hour rainfall, '$P_{2,24}$,', have low 't- ratio's' suggesting marginal or no improvement in the model with their addition at the desired significance level. Nevertheless, their influence was explored. Since the significance level is not listed as a part of the MINITAB output, all test statistics were compared with standard tables to determine the level of significance before the variable was included/rejected from the model.

Additional insight into the dependency of volume on any of the variables was obtained by plotting the volume against the individual variables. The plots of V_{100} against Area, Length, Slope, Shape, 2yr-24 hour Precipitation and Mean Annual Rainfall are shown in Figures 11a to f, respectively.

As shown in figures 11 a and b, volumes increase almost linearly with contributing drainage area and length. Increases in volumes with increases in the independent variables were not clearly related. For example, two different sets of volumes correspond to the same slope range (Figure 11d). The effect of shape (Figure 11c) on volume is not clear. Although average annual precipitation and the 2 year-24 hour precipitation (Figures 11 e and f) have a positive impact on the generated volumes, they do not follow specific patterns.

It was observed that within a region and for the same duration, variables selected by stepwise regression were not always the same. For example, in the case of the 1 day duration in Region 1, Area and Slope were most influential for recurrence intervals of 25,
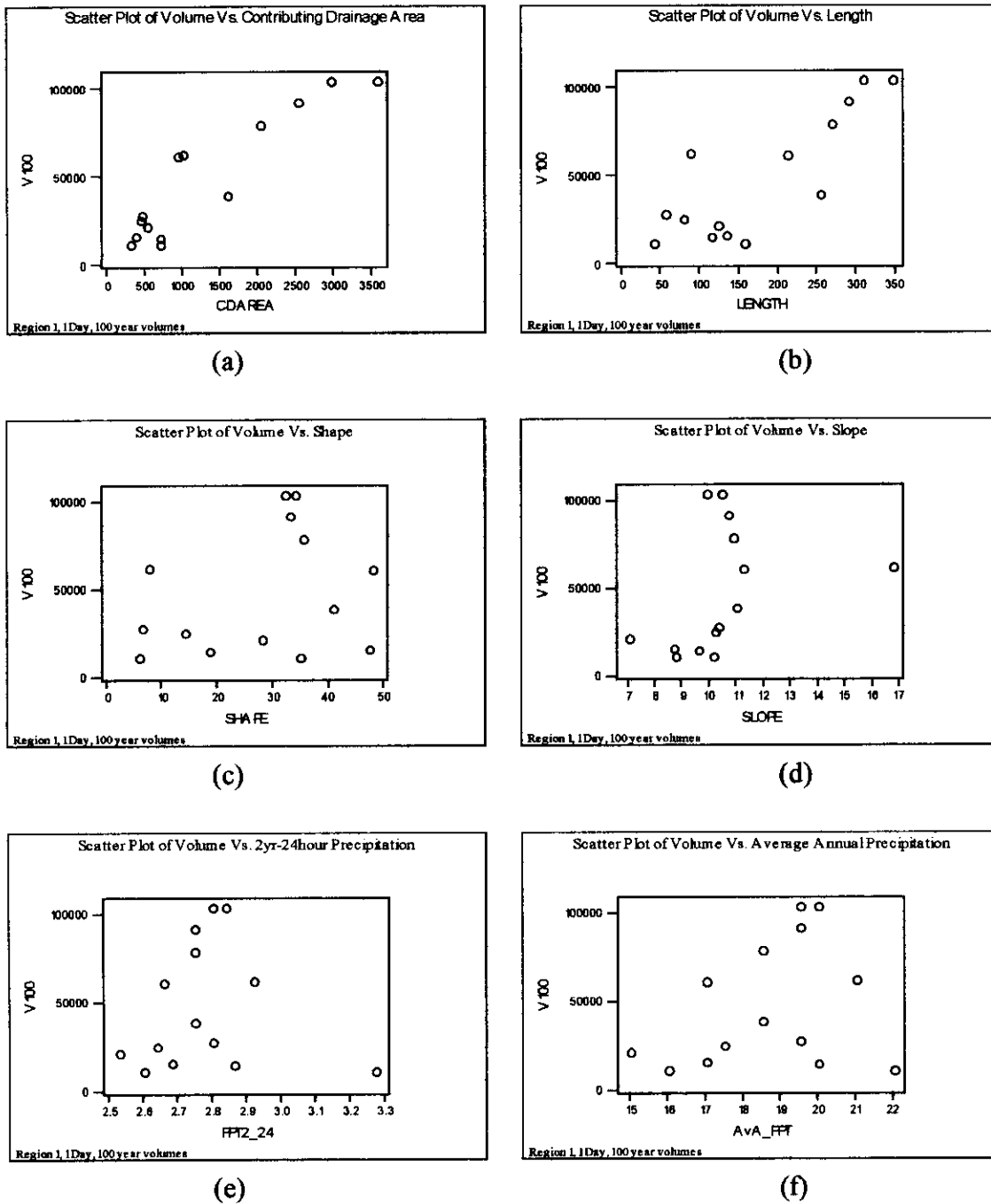
Figure 11. Scatter plots of the 1 day-100 year volumes vs. (a) contributing drainage area, (b) length, (c) shape, (d) slope, (e) 2 yr-24hr. precipitation, and (f) mean annual precipitation for Region 1.

50, 100 and 200 years, while, area and length were found to be more dominant for recurrence intervals of 2, 5 and 10 years. In such cases, variables influencing majority of the equations were chosen for all frequencies.

Consequently, Area and/or Shape were chosen as the independent variables for all cases in Region 1 with the exception of one equation ($V_{1,50}$ for 1 day duration) where Slope was found to be more significant.

To ensure consistency within the same region, variables influencing most of the equations in a region were used in the development of the equations. Lower frequency and/or higher duration volumes essentially governed the choice of independent variables, while care was taken to ensure that the test statistics (such as the R^2) were not appreciably different among alternative equations.

2.4.7 Regression

Since the contributing drainage area has a major impact on the volume generated in Region 1, volumes were regressed initially with area 'A'. The output obtained for $V_{1,100}$ is shown in Table 8. The term 's' in the regression output is the standard deviation (error) in log units. This term is discussed in greater detail in Chapter IV.

Table 8. Initial regression output for Region 1, 1day-100year volumes.

The regression equation is
$V_{100} = 1.95 + 0.875\ A$

Predictor	Coef	Stdev	t-ratio	p		
Constant	1.951	0.4296	4.54	0.0001		
A	0.875	0.1433	6.11	0.0001		

$s = 0.1817$ R-sq = 75.7%   R-sq(adj) = 73.6%

Analysis of Variance

SOURCE	DF	SS	MS	F	p	
Regression	1	1.23110	1.23110	37.31	0.000	
Error	12	0.39600	0.03300			
Total	13	1.62710				

Durbin-Watson statistic = 2.85
No evidence of lack of fit (P > 0.1)

The output in Table 8 indicates that the regression equation explains 73.6 percent of the variation in the dependent variable, i.e., volume.

2.4.8 Weighted Regression

It is known that when some observations are less 'reliable' than others, weighted least squares regression is preferred over ordinary least squares. Weights can be derived using variances of the individual variables (Draper and Smith, 1981). In the area of flood regionalization, Tasker (1980) suggested a method of determining these weights. In this research, the period of record was used as a weighting factor. The regression equation is written as:

$$y_i = \beta_0 + \sum_{j=1}^{p} \beta_j x_{ij} + e_i \qquad \text{for } i=1,2,...,N \qquad (10)$$

where β_o and β_j are constants, x_{ij} is the jth basin characteristic at the ith station, y_i is the estimate of the flow characteristic (volume in our case) at station i, N is the number of stations and 'p' is the number of basin characteristics, and e_i is a random variable having zero mean and variance $\sigma^2(y_i)$ proportional to the variance of y_i. For a simple case with P=1, the estimates of β_o and β_j are

$$\beta_1 = \frac{\sum_{i=1}^{N} w_i (y_i - \bar{y})(x_i - \bar{x})}{\sum_{i=1}^{N} w_i (x_i - \bar{x})^2} \qquad \text{and} \qquad \beta_o = \bar{y} - \beta_1 \bar{x} \qquad (11)$$

where

$$\bar{y} = \frac{\sum_{i=1}^{N} w_i y_i}{\sum_{i=1}^{N} w_i} \quad ; \qquad \bar{x} = \frac{\sum_{i=1}^{N} w_i x_i}{\sum_{i=1}^{N} w_i} \quad ; \qquad (12)$$

and w_i is a weight which is proportional to the reciprocal of the variance of y_i. The above is a general formulation for the weighting function.

The results obtained using the weighted least squares regression technique are shown in Table 9. The form of the final equation remains unchanged because the period of record for all variables used in the regression equation is nearly the same. As such, the weights assigned are nearly equal. However, in situations where period of record is variable, the coefficients in the resulting regression equation can be expected to differ markedly. Weighted least squares regression was used throughout this study for consistency.

Regression equations could be developed for only 7 of the 12 regions. The equations for the 7 regions and the reasons for failure in the remaining 5 regions are discussed in the Chapter IV.

Table 9. Weighted least squares output (Region 1, 1day-100year volumes).

The regression equation is

$V_{100} = 2.04 + 0.849$ A

Predictor	Coef	Stdev	t-ratio	p
Constant	2.0432	0.3908	5.23	0.000
A	0.8491	0.1330	6.38	0.000

Analysis of Variance

SOURCE	DF	SS	MS	F	p
Regression	1	27.022	27.022	40.76	0.0001
Error	12	7.955	0.663		
Total	13	34.977			

SOURCE	DF	SEQ SS
A	1	25.185

Durbin-Watson statistic = 2.84

No evidence of lack of fit (P > 0.1)

CHAPTER III

SMALL WATERSHEDS

3.1 METHODOLOGY

The methodology adopted for large watersheds is also applicable to small watersheds. However, to maintain consistency it was not applied to small watersheds because the response times are usually in the order of hours and not days. As was described in the previous chapter, daily means enable estimation of daily volumes. However, it is the hourly volumes, not daily volumes, that are of more interest in the case of small watersheds. For example, it would be more beneficial to be able to estimate the 10 year-4 hour volume for a 20 square mile watershed rather than the 10 year-4 day volume. Daily volumes do not allow calculation of hourly time distribution of volumes under the hydrograph. As this research focuses on volume determination over meaningful durations, an approach using the daily means is of little or no use.

The general approach, however, can be extended to small watersheds with appropriate time adjustments. That is, hourly means can be used to compute hourly volumes, which in turn can be aggregated over desired durations to produce volume-duration information at those sites. Such information can then be regionalized. A study in England (NERC, 1975) did in fact, adopt such an approach to volume computation over hourly durations through the use of reduction ratios. This study however, precludes such an approach owing to the overwhelming amount of data processing involved in the process. Not only is data processing intensive at each site, but data from a large number of sites needs to be processed to regionalize information for a state the size of Texas. Such an endeavor was beyond the scope of this research.

At this point, it was apparent that an alternative approach to the daily-means method is hydrograph generation. Traditionally, hydrograph generation techniques consisted of using a rainfall-runoff model to generate the hydrograph for a rainfall of a specific intensity. The process invariably uses a unit hydrograph (SCS dimensionless, Snyder's or Clark's unit hydrograph) in conjunction with rainfall data. The drawbacks of such an ap-

proach have already been discussed. Also, the goals of this research were to identify and adopt methodologies that do not use rainfall information (in the generation, calibration or verification stage).

Consider the hydrograph shown in Figure 12. [The terminology used in Figure 12 to describe the various hydrograph components will be used throughout this text unless otherwise noted].
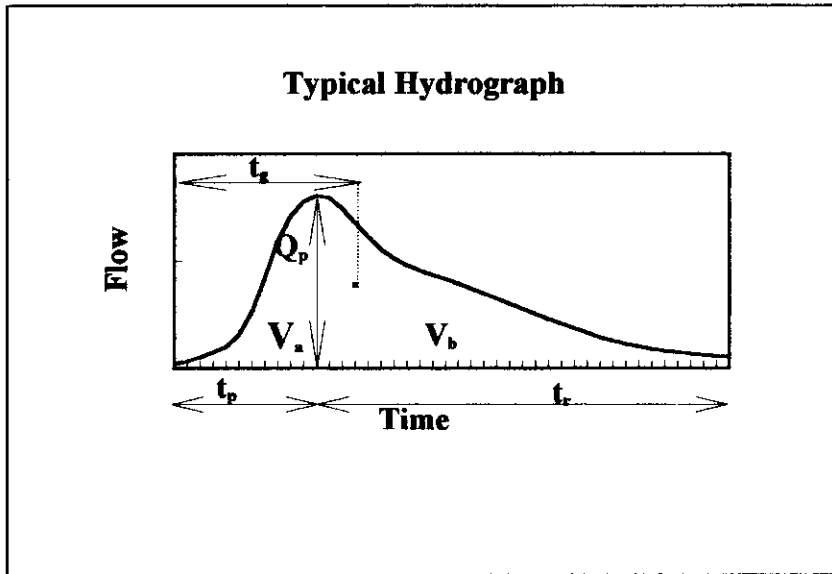
Figure 12.   A typical single storm hydrograph with its
             principal components.

The components of the hydrograph are defined as follows: t_p is the time to peak; Q_p is the peak discharge; t_r, is the time of recession; t_g is the time to the centroid of runoff; V_a is the volume of flow under the rising limb of the hydrograph; and V_b is the volume of flow under the recession limb of the hydrograph. Two additional terms not shown in Figure 12 are: t_b, the time base of the hydrograph which is the sum of t_p and t_r; and V, the total volume under the hydrograph which is the sum of V_a and V_b.

The gamma function has long been used to characterize the hydrograph shape. Edson (1951) was perhaps the first to propose the use of a gamma distribution to represent a hydrograph, followed by Nash (1959). Other functions, such as the Pearson type III, have also been used for this purpose. However, both the gamma and other functions have primarily been used to develop unit hydrographs, not actual hydrographs. These unit hydrographs are subsequently used to generate the desired hydrographs.

3.1.1 Gamma Function

The gamma function, stated by Aron and White (1982) as being "harmless but fierce looking," is a very useful mathematical tool for hydrologists. Derivation of the gamma function for hydrograph replication is described in most texts on hydrology. Since the gamma function has two parameters, different researchers proposed different methods to estimate the two parameters. While Croley (1980) mentioned some of the methods and proposed some of his own, others developed dimensionless unit hydrographs using the gamma distribution (Haan and Barfield, 1978; Aron and White, 1982; Collins, 1983). Rosso (1984), on the other hand, parameterized the Nash model of the Instantaneous Unit Hydrograph, (IUH, basically a gamma function) in terms of Horton order ratios of a catchment. Singh (1985) evaluated and compared twelve such methods of fitting the incomplete or the two parameter gamma function to runoff hydrographs. A discussion on one such approach using the time to peak, t_p, and the peak discharge, Q_p, as boundary conditions follows.

In Figure 12, discharge expressed as a function of time is represented as Q(t). Integrating this function over the duration of the hydrograph gives the total runoff volume:

$$\int_0^\infty Q(t)dt = V \tag{13}$$

Also, Q(t) is non-negative and approaches zero as time 't' approaches infinity (equations 14, 15 and 16). Like many probability density functions, the Gamma distribution satisfies the above conditions. It has been used in the field of hydrology for a very long time (Kalinin and Milukov, 1958; Nash, 1960; Schulz, et al., 1971; Soil Conservation Service, 1972; W.M.O., 1975; Haan and Barfield, 1978; Rosso, 1984; Singh and Chowd-

hury, 1985; and Chang-Xing, 1992, to mention a few) to represent both hydrographs and dimensionless unit hydrographs.

$$Q(t) = 0, \qquad t < 0 \tag{14}$$

$$Q(t) > 0, \qquad t > 0 \tag{15}$$

$$\lim_{t \to \infty} Q(t) = 0 \tag{16}$$

To ensure that the hydrograph is skewed right, as most hydrographs are, the following two constraints are included:

$$\int_0^\infty (t - \mu)^3 Q(t)dt > 0 \tag{17}$$

where:

$$\mu = \int_0^\infty tQ(t)dt \tag{18}$$

The general form of the two parameter gamma distribution for any random variable 'x' is:

$$f(x) = \frac{1}{k} \cdot \left(\frac{x}{k}\right)^{(n-1)} \cdot \frac{e^{-x/k}}{\Gamma(n)} \tag{19}$$

where, n and k are the two parameters defining the function $f(x)$.

The analytical expression of (19) can be re-written to define the (unit) hydrograph shape:

$$f(t) = \frac{t^\alpha e^{-t/\beta}}{\beta^{\alpha+1}\Gamma(\alpha+1)} \tag{20}$$

where, t is the time;

α is the shape parameter;

β is the scale parameter (with the same units as 't').

$\Gamma(\alpha+1)$ is the gamma function of $\alpha+1$, which is tabulated in most

mathematical handbooks (particularly, Abramowitz and Stegun, 1970).

Multiplying by the volume under the (unit) hydrograph, V, and substituting Q(t), the discharge at time t, for f(t), (20) can be re-written as (Croley, 1980):

$$Q(t) = \frac{V t^{\alpha} e^{-t/\beta}}{\beta^{\alpha+1} \Gamma(\alpha+1)} \tag{21}$$

The above equation holds true for all positive α, β, and t. Since there are two unknowns, α and β, in (21), two equations in α and β are sufficient to solve for α and β. Possible parameter sets that enable developing such equations are (t_p, Q_p), (t_p, t_r), (t_r, Q_r). Other parameter sets are also possible, such as combinations of the above with the inflection point, t_i, and corresponding discharge, Q_i, (Croley, 1980). Given a runoff hydrograph, the most readily available parameters are Q_p and t_p. Parameters such as the lag time can also be computed, but require a knowledge of the rainfall corresponding to the event unless an empirical formula such as Snyder's (1938) is used. The primary considerations in this research are the time to peak, t_p, peak discharge, Q_p, and the time base of the hydrograph, t_b. Assuming Q_p and t_p are known, equations can be readily developed to solve for α and β. The first derivative of $Q(t)$ is zero at ($t = t_p$) and solving (21) for this condition gives:

$$\frac{t_p}{\beta} = \alpha - 1 \tag{22}$$

Also, it is obvious that $Q = Q_p$ at $t = t_p$. Therefore, including this condition in (21) results in:

$$\frac{Q_p t_p}{V} = \frac{(\alpha-1)^{\alpha} e^{(1-\alpha)}}{\Gamma(\alpha)} \tag{23}$$

Rewriting (23) in terms of β, we have:

$$\frac{Q_p t_p}{V} = \frac{e^{-(t_p/\beta)}}{(t_p/\beta)^{(t_p/\beta)} \cdot \Gamma(t_p/\beta)} \tag{24}$$

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Equations (23) or (24) can be used to solve for one of the parameters, α or β, and the other can be solved from (22). The alternative would be to combine equations (21) and (23) to develop a dimensionless form of (24):

$$\frac{Q_t}{Q_p} = \left(\frac{t}{t_p}\right)^{t_p/\beta} \cdot e^{\frac{(t_p-t)}{\beta}} \tag{25}$$

Rewriting (25) in terms of α, we have:

$$\frac{Q_t}{Q_p} = \left(\frac{t}{t_p}\right)^{(\alpha-1)} \cdot e^{\frac{(t_p-t)}{t_p}(\alpha-1)} \tag{26}$$

From (25) and (26) it can be seen that both the storm characteristics and watershed response are reflected in one parameter, α (or β). Ponce(1989) expresses (25) in another form:

$$\frac{Q_t}{Q_p} = \left(\frac{t}{t_p}\right)^{\left(\frac{t_p}{(t_g-t_p)}\right)} \cdot e^{\frac{(t_p-t)}{(t_g-t_p)}} \tag{27}$$

Examining (25), (26) and (27), it is obvious that both α and β can be expressed in terms of the time to peak, t_p, and the time to the centroid of the runoff, t_g, as:

$$\beta = t_g - t_p \tag{28}$$

and

$$\alpha = \frac{t_g}{(t_g - t_p)} \tag{29}$$

Thus (25) or (26) can be used to generate a synthetic hydrograph for given values of t_p, and Q_p. This approach was adopted in this research. The results are discussed in Chapter IV.

3.1.2 Database

Continuous hourly runoff data for a period of two years was retrieved from the USGS database for over 50 sites. All the sites chosen were less than 300 square miles in area. The

data were analyzed to identify isolated, single storm events. Data from sites where single events could not be obtained were discarded thereby reducing the size of the database. The peaks of such events were compared to the base discharge of the watershed and were used only if they were substantially higher than the base discharge. After all such events were identified and assembled, the individual hydrograph components Q_p, t_p, t_b, t_g, V, V_a and V_b were computed. The intent was to use such information from actual hydrographs and reproduce hydrographs for specific Q_p's without resorting to rainfall-runoff modeling.

A methodology to identify watersheds meeting the above criteria is discussed in the next section.

3.2 THE WINDOW TEST

This research chose an arbitrary cut-off point of 300 square miles between small and large watersheds. However, the words small and large are subjective. Watersheds have been classified small and large by different criteria such as drainage area, lag time, time of concentration, etc. Some authors have found it convenient to identify watershed boundaries in terms of ranges and not fixed values. Ponce (1989), for example, uses an upper limit of 1.3 to 2.5 km^2 to classify a watershed as small, a range of 100 to 5000 km^2 for the upper limit of mid-size catchments, and anything greater than 5000 km^2 as large. Occasionally, the purpose of study, models to be used, results expected and other conditions over-ride physical considerations in watershed classification.

Owing to the methodology adopted in this study, i.e., to use daily-means to estimate daily volumes, it became crucial to classify watersheds into two categories: where such a methodology is applicable (large); and where it is not (small). The idea behind the methodology is itself used as a criterion to identify large and small watersheds.

To determine the limits of watershed size to be included in large or small classifications, a study was undertaken using over 30 watersheds ranging in size from a few square miles to 500 square miles. Two years of hourly data for each watershed were processed. The summary information is shown in Table 10. Additional characteristics such as basin shape, elongation ratio and rotundity were computed for all basins. [The basin shape is defined as "a measure of

the shape of the basin computed as the ratio of the length of the basin to its average width" (U. S. Corps of Engineers, 1963). The elongation ratio is the ratio of the diameter of a circle of area equal to that of the basin, to the length of the basin (Schumm, 1956). Rotundity is defined as the ratio of the square of the basin length to the square of the diameter of a circle of equal area]. These physical characteristics were related to the behavior of individual watersheds to be able to better define small and large. The actual test itself, termed the Window Test, is described in the next paragraph.

The annual peaks and the daily means are the most readily available hydrologic information. These two pieces of information are characteristic of watershed behavior. Theoretically, for large watersheds, the maximum annual daily mean flow and the peak flow should occur for the same event, since the response of such watersheds spans over several days. The variation should, at the most, be a day off depending on the timing of the peak. Since the daily means are representative of mid-night to mid-night measurements, it is likely that the annual maximum daily mean is recorded a day before or after the peak is recorded. The percentages of such events are tabulated in column 9 of Table 10. In the case of small watersheds, it is expected to vary significantly. One measure of this behavior is the direct estimation of the percentage of events in which the annual peak and the annual maximum daily mean (MDM) occurred within one day of each other. This percentage should be large for a large watershed and small for a small watershed.

The test is based on a moving window, 24 hours wide, along the time series of hourly flows. This window would identify the maximum 24 hour volume and the maximum daily mean volume. A macro was written in a pc based spreadsheet to compute the maximum 24-hour volumes and the maximum daily mean volumes. Figure 13 illustrates an example of the Window Test. The macro reads the data from the beginning to the end of the data file and computes hourly volumes for the entire data set. It then aggregates the volumes over the first 24 hours. In Figure 13, for example, the first 24 hour volume, V_1, corresponds to a volume computed over a 24 hour period starting at t_1. The computations are then lagged by one hour and the next 24 hour volume, V_2, corresponding to time, t_2, is calculated. This procedure is repeated through the entire period of record of the watershed. The maximum volume is then

Table 10. Summary information from gages used in the window test.

| Gage #	Yrs. of Record	Area (mi²)	Slope (ft/mi)	Length (mi)	Shape L^2/A	Elongation Ratio	Rotundity	Percentage	Mean MDM/Peak Ratio
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
8042700	24	21.6	23.9	10.7	5.30	0.49	4.16	75	0.17
7332600	23	72.0	8.4	19.5	5.28	0.49	4.15	82	0.41
8070500	45	105.0	8.14	28.8	7.9	0.40	6.20	82	0.67
8071000	34	117.0	7.58	27.4	6.42	0.45	5.04	88	0.77
8029500	38	128.0	12.0	20.8	3.38	0.61	2.65	79	0.72
8066200	27	141.0	7.51	21.5	3.28	0.62	2.57	85	0.64
8033900	25	158.0	7.28	21.4	2.90	0.66	2.28	92	0.65
7315200	26	178.0	5.81	21.7	5.65	0.48	4.43	77	0.75
8095300	25	182.0	19	31.6	5.49	0.48	4.31	80	0.27
8198000	48	206.0	22.5	32.8	5.22	0.49	4.10	83	0.28
8130500	30	229.0	14.9	30.4	4.04	0.56	3.17	83	0.28
8051000	38	266.0	8.7	26.7	2.68	0.69	2.10	94	0.75
7343000	41	276.0	4.38	34.1	4.21	0.55	3.31	78	0.39
8093500	50	308.0	9.88	32.3	3.39	0.61	2.66	95	0.61
8070000	51	325.0	4.74	42.5	5.56	0.48	4.36	96	0.85
8177000	31	369.0	6.47	50.5	6.91	0.43	5.43	75	0.43
7346050	27	383.0	3.86	48	6.02	0.46	4.72	100	0.91
8171300	33	412.0	13.6	77.2	14.47	0.30	11.36	73	0.28
8101000	40	455.0	11.1	72.7	11.62	0.33	9.12	75	0.33
8179000	42	474.0	16.2	57	6.85	0.43	5.38	80	0.31
7343500	40	494.0	2.93	70.4	10.03	0.36	7.88	83	0.88
8038000	44	503.0	2.76	65.9	8.63	0.38	6.78	93	0.87
7342500	48	527.0	3.97	63.9	7.75	0.41	6.08	92	0.85
8175000	35	549.0	57	4.77	0.04	5.55	0.03	91	0.84
8019000	52	585.0	5.7	55.1	5.19	0.50	4.07	88	0.87
7346070	44	675.0	2.15	81.1	9.74	0.36	7.65	98	0.97
8063000	27	733.0	5.3	49.8	3.38	0.61	2.66	93	0.83
8190000	67	764.0	14.8	61	4.87	0.51	3.82	82	0.46
8041500	54	860.0	3.88	71.2	5.89	0.47	4.63	98	0.96
7311700	30	937.0	8.72	95	9.63	0.36	7.56	83	0.58
7343200	34	1365.0	3.13	98.7	7.14	0.42	5.60	79	0.88
8033500	87	3636.0	1.29	253	17.60	0.27	13.82	98	0.99
8151500	50	4197.0	8.84	147	5.15	0.50	4.04	92	0.41
8176500	55	5198.0	4.2	414	32.97	0.20	25.88	96	0.89
8041000	71	7951.0	1.07	350	15.41	0.29	12.09	97	0.99
8065000	67	12833.0	2.56	339	8.96	0.38	7.03	97	0.99
8066000	45	15589.0	1.7	525	17.68	0.27	13.88	100	0.98
8066500	66	17186.0	1.67	613	21.86	0.24	17.16	93	0.98

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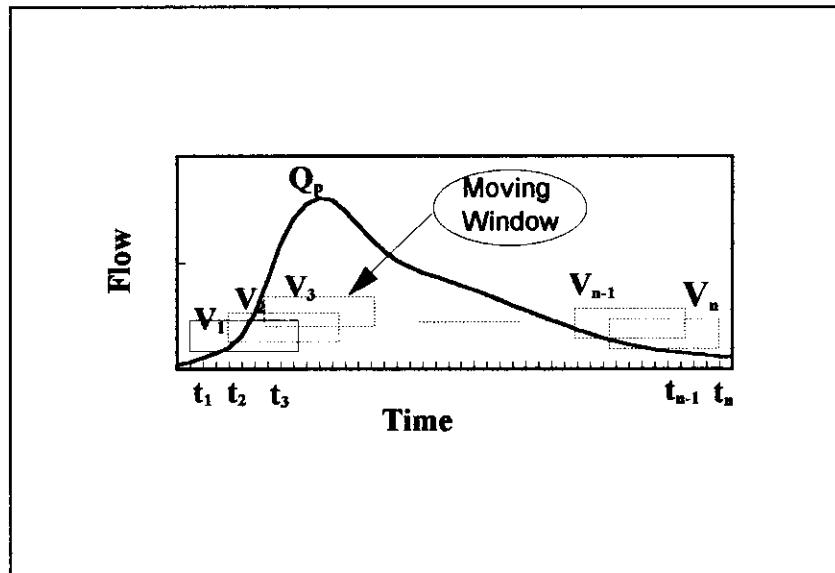
Figure 13.   Schematic representation of the Window Test.

compared to the volume estimated using the daily means.   When the response times of watershed are in the neighborhood of 24 hours these volumes are expected to differ markedly.

The other noteworthy characteristic is the ratio of the maximum daily mean to the peak. This ratio usually ranges between 0.2 and 1 depending on the size of the watersheds (Slade, 1993). For large watersheds this ratio is expected to be close to 1. Column 10 of Table 10 lists the mean of the ratios for the entire period of record for each watershed. Care was taken to make sure the ratios were computed using the maximum daily means that corresponded only to the annual peaks. For example, if the annual maximum peak occurred on 5/5/92 and the annual maximum daily mean was recorded on 8/3/92, the ratio of the maximum daily mean on 5/5/92 to the annual peak (which occurred on 5/5/92) was taken. For some of the watersheds, records beyond a certain date represent data under regulated conditions. Care was also taken to eliminate regulated data from the analysis of individual watersheds.

The percentage of events for which the annual maximum peak and the annual maximum daily mean discharge occur for the same event and the MDM/PEAK ratio serve as a measure of the watershed behavior and thereby help in establishing a criteria to define small and large watersheds for this study. Results from this test are also discussed in Chapter IV.

CHAPTER IV

RESULTS AND DISCUSSION

4.1 LARGE WATERSHEDS

For consistency with the procedure outlined in Chapter II, results obtained in this research are discussed separately for gaged and ungaged watersheds. Results for the ungaged locations include a discussion of the regionalization technique adopted.

4.1.1 Gaged Watersheds

Time series of annual maxima of daily volumes for select durations (1, 2, 3, 5 and 10 days) and different recurrence intervals were estimated at all the sites in the study area following steps outlined in Chapter II. Output from the program includes: summary statistics of the daily means; log-Pearson Type III estimates for recurrence intervals of 1.05, 2, 5, 10, 25, 50, 100 and 200 years. For results at individual sites, reference is made to Devulapalli and Valdés (1994). Results for one location are included in Table 11 for illustrative purposes.

4.1.2 Ungaged Watersheds

To estimate flood volumes for different duration-frequencies for ungaged basins, volumes estimated at gaged locations were related to their basin and climatic characteristics as described earlier. All six basin characteristics were used in the regression analyses. However, only those characteristics statistically significant at the 95% confidence level were included in the final equations. Regression diagnostics for the example discussed in Chapter II are outlined and discussed here. Equations could be developed, for all durations and recurrence intervals chosen, in only seven of the twelve regions (regions 1, 4, 6, 8, 10, 11 and 12). In region 2, equations could be developed for some duration-frequencies. In the rest of the regions (regions 3, 5, 7 and 9), equations could not be developed and it is suggested that alternative methodologies, such as rainfall-runoff modeling, be considered for flood volume estimation.

Table 11. Sample output of log-Pearson type III estimates of flood volumes at a gaged location (gage # 7346000)

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2411.	3525.	5591.	13575.	33137.	52947.	87405.	120927.	161970.	211955.
2	4786.	6939.	10896.	25927.	61964.	97881.	155572.	218966.	291085.	378268.
3	7108.	10198.	15805.	36642.	85213.	132624.	212732.	288810.	300196.	489600.
4	9311.	13220.	20238.	45880.	104487.	160956.	255406.	344590.	451067.	577915.
5	11426.	16052.	24264.	53715.	119525.	181949.	285231.	381659.	496076.	631497.
6	13428.	18711.	27998.	60736.	132279.	199020.	308006.	408653.	527043.	666078.
7	15355.	21249.	31511.	67040.	142785.	212072.	323417.	424860.	542849.	680049.
8	17211.	23687.	34863.	72895.	152048.	223046.	335341.	436238.	552283.	685836.
9	18977.	26023.	38080.	78421.	160309.	232224.	344005.	442882.	555193.	682922.
10	20610.	28186.	41057.	83480.	167685.	240219.	351182.	447924.	556551.	678736.

Readers are reminded that the validity of these equations lies strictly within the range of data used in their development (limitations listed in section 4.14).

4.1.2.1 Diagnostics

The following diagnostics were performed to evaluate the validity of assumptions involved in the regression process. Table 12 lists the values of the individual diagnostics pertaining to the development of equation for the 1 day-100 year volumes in region 1 (example used in Chapter II). Some individual diagnostics in Table 12 are defined and discussed in the following paragraphs.

Table 12. Printout of Diagnostic Statistics for 1 Day-100 year volumes in Region 1.

SRES6	FITS6	RESI6	COEF6	TRES6	HI6	COOK6	DFIT6
0.85101	4.26418	0.14321	1.95103	0.8405	0.14174	0.05980	0.34158
0.95562	4.29327	0.16205	0.87505	0.9518	0.12853	0.06734	0.36555
-0.00923	4.34060	-0.00158		-0.0088	0.10996	0.00001	-0.00311
-2.18546	4.44655	-0.38045		-2.6969	0.08159	0.21216	-0.80382
1.37979	4.54860	0.24151		1.4402	0.07151	0.07331	0.39968
-0.89842	4.75025	-0.15471		-0.8907	0.10133	0.04550	-0.29907
0.30722	4.84394	0.05182		0.2953	0.13766	0.00753	0.11799
0.20351	4.92802	0.03343		0.1952	0.18241	0.00462	0.09219
0.18646	4.98806	0.02988		0.1788	0.22139	0.00494	0.09533
-0.25623	5.05787	-0.03966		-0.2460	0.27407	0.01239	-0.15115
-0.31546	4.12241	-0.05042		-0.3033	0.22583	0.01452	-0.16381
1.23083	4.58108	0.21540		102607	0.07185	0.05863	0.35075
-1.48655	4.44225	-0.25867		-1.5757	0.08238	0.09920	-0.47215
0.04942	4.21046	0.00818		0.0473	0.16976	0.00025	0.02139

Residual Analysis

The studentized residuals (of the form residual/standard deviation of residual) are plotted against the 'Fitted $\hat{Y}$', 'Contributing Drainage A' and 'Slope' to check for homogeneity of variance and normality in the case of region 1. (For other regions, the residuals

are plotted against the independent variables used in the respective equations). The plots are shown in Figures 14 a, b and c. Reasons for the use of Studentized residuals rather than regular and standardized residuals are presented by Weisberg, (1980).

Studentized residuals are helpful in identifying observations with unusual response. In computing the studentized residual of an individual observation, the observation is first removed from the data set. The ratio of the residual to the standard deviation of the residual of the corresonding data set (excluding the variable) is the studentized residual of that variable. One advantage of using a studentized residual is that the individual observations cannot influence the estimates and unusual Y's clearly stand out.

Further information on studentized residuals can be obtained elsewhere (Atkinson, 1985; Weisberg, 1980). The plots illustrate that the assumptions of homogeneity and normality of the residuals is met.

Leverages (HI)

This statistic helps identify unusual observations (in terms of the predictors) which influence the magnitude of the regression coefficients. Typically, HI values greater than 3p/n indicate the presence of extreme values. As can be seen from Table 12, none of the HI's are greater than 3p/n ($=3x3/12=0.75$).

DFITS

This statistic combines leverage (HI) and the studentized residual to measure how unusual an observation is. Typically, if DFITS > 2 $(p/n)^{0.5}$ the observation is considered unusual (Belsley, and Welsch, 1980). From Table 12 it can be seen that none of the DFITS exceed the threshold i.e., none have a value greater than 1 ($=2x(3/12)^{0.5}$).

Variance Inflation Factor (VIF)

The Variance Inflation Factor measures the combined effect of the dependencies among the regressors on that term (Draper and Smith, 1981). VIF's larger than 10 indicate that the associated regression coefficients are poorly estimated because of multicollinearity. The VIF value for the example equation is not listed in Tables 8 and 9 since

only one variable is used in the development of this equation. However, none of the VIF's (for any variables in any equation developed) in any of the regions exceeded 1.1, indicating the absence of multi-collinearity.


(a)

(b)

(c)
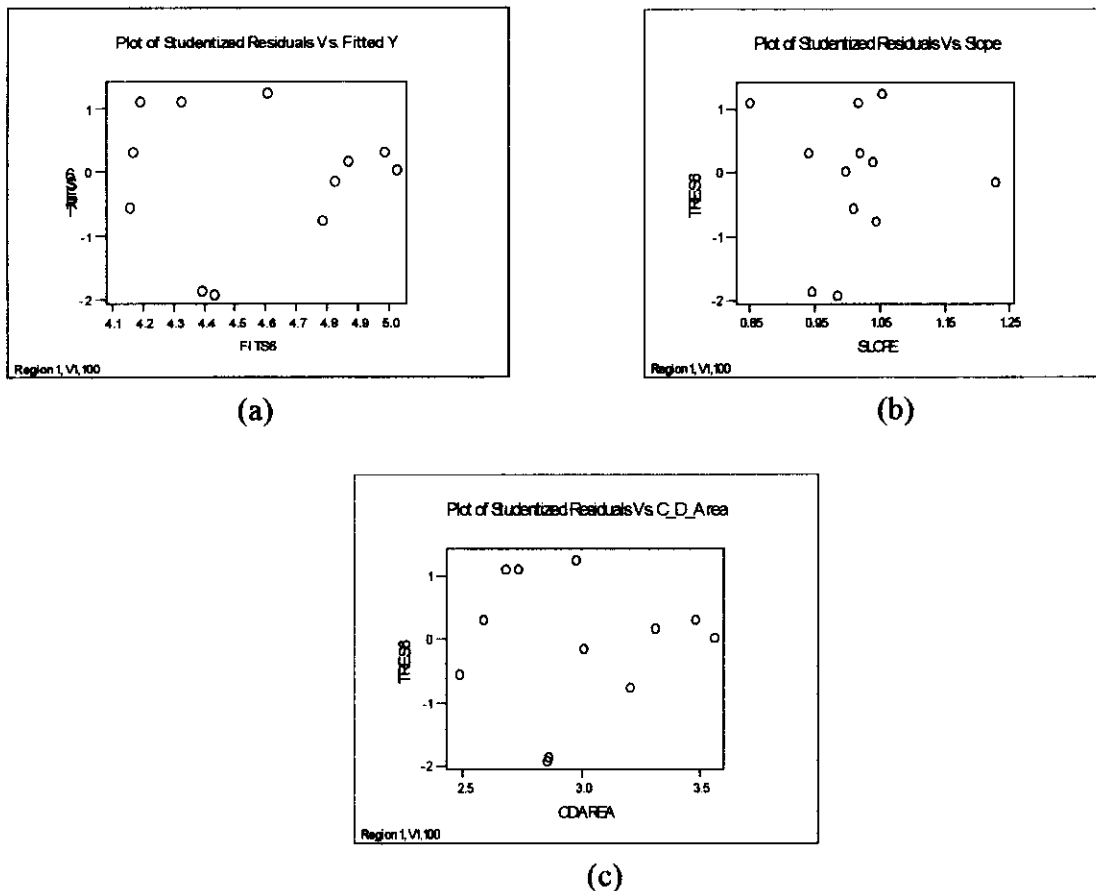
Figure 14. Plot of Studentized residuals against (a) fitted Y values, (b) contributing drainage area, and (c) slope.

4.1.3 Regional Equations

The regression equations developed for the seven regions are summarized in the following pages (Tables 13-20). The equations are presented in a tabular format for ease of use. All equations within a table correspond to a specific region. It can be seen that the error term in all the equations is expressed in two forms: the standard deviation in log

units, and as a percentage. Since the original regression equations were developed for logarithmic transforms of the data, the errors are reported in log units in the computer output. These errors can be converted to percentages using the formula suggested by Hardison (1969). A more convenient conversion table can be found in Tasker (1978). The conversion is however, only approximate and the interpretation of standard error can be misleading (Tasker, 1978) when the standard errors in log units are large. For example, an error of 0.1817 log (base 10) units, corresponding to 43.7% from tables (Tasker, 1978), means two-thirds of the observations lie within 0.1817 log units of the regression line. [It is incorrect to state that two-thirds of the observations lie within 43.7% of the regression line]. In this case, using the relation between log units and percentages of the standard error (Hardison, 1969, Table 2), we can say that two thirds of the observations would lie between plus 55.5% and minus 34.2%.

In developing these equations, care was taken to study the R^2 values in conjunction with the standard errors, 's.' In some cases inclusion of an additional variable did not significantly reduce the error term, although it marginally improved the R^2 value. In such cases the additional variable was not included in the equation.

Table 13. VDF relationships for Region 1 (durations 1, 2, 3, 5 and 10 days).

REGION 1

(1 Day Volumes)   R1-1D

Equation			R^2 (adj.)	Std. Error (log units)	%
$V_{1,2}=$ 0.13	$(A)^{1.83}$	$(S_h)^{-0.8}$	0.834	.2488	± 62
$V_{1,5}=$ 2.14	$(A)^{1.49}$	$(S_h)^{-0.66}$	0.890	.1601	± 38
$V_{1,10}=$ 7.64	$(A)^{1.32}$	$(S_h)^{-0.55}$	0.903	.1333	± 31
$V_{1,25}=$ 25.12	$(A)^{1.15}$	$(S_h)^{-0.41}$	0.875	.1349	± 31
$V_{1,50}=$ 4.65	$(A)^{0.84}$	$(S_l^*)^{1.25}$	0.845	.1428	± 33
$V_{1,100}=$ 89.13	$(A)^{0.88}$		0.736	.1817	± 43
$V_{1,200}=$ 148	$(A)^{0.84}$		0.668	.2045	± 49

(2 Day Volumes)   R1-2D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$ 0.17	$(A)^{1.84}$	$(S_h)^{-0.81}$	0.830	.2530	± 63
$V_{2,5}=$ 2.8	$(A)^{1.46}$	$(S_h)^{-0.59}$	0.875	.1698	± 40
$V_{2,10}=$ 10	$(A)^{1.28}$	$(S_h)^{-0.43}$	0.888	.1410	± 33
$V_{2,25}=$ 5.6	$(A)^{0.93}$	$(S_h)^{0.94}$	0.887	.1257	± 29
$V_{2,50}=$ 66.07	$(A)^{0.93}$		0.855	.1343	± 31
$V_{2,100}=$ 117.5	$(A)^{0.89}$		0.816	.1472	± 34
$V_{2,200}=$ 195	$(A)^{0.86}$		0.744	.1744	± 41

* Slope is used in this equation only.

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Table 13   (cont'd).

(3 Day Volumes)   **R1-3D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$	0.2	$(A)^{1.83}$	$(S_h)^{-0.79}$	0.830	.2516	± 62
$V_{3,5}=$	3.0	$(A)^{1.45}$	$(S_h)^{-0.55}$	0.873	.1705	± 40
$V_{3,10}=$	11	$(A)^{1.27}$	$(S_h)^{-0.37}$	0.888	.1409	± 33
$V_{3,25}=$	33	$(A)^{1.01}$		0.878	.1311	± 31
$V_{3,50}=$	65	$(A)^{0.96}$		0.874	.1272	± 29
$V_{3,100}=$	115	$(A)^{0.92}$		0.828	.1459	± 34
$V_{3,200}=$	186	$(A)^{0.89}$		0.750	.1779	± 43

(5 Day Volumes)   **R1-5D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$	0.21	$(A)^{1.83}$	$(S_h)^{-0.79}$	0.835	.2478	± 62
$V_{5,5}=$	3.2	$(A)^{1.44}$	$(S_h)^{-0.51}$	0.873	.1706	± 41
$V_{5,10}=$	11	$(A)^{1.25}$	$(S_h)^{-0.33}$	0.887	.1415	± 33
$V_{5,25}=$	36	$(A)^{1.01}$		0.891	.1233	± 29
$V_{5,50}=$	74	$(A)^{0.96}$		0.882	.1224	± 29
$V_{5,100}=$	135	$(A)^{0.92}$		0.828	.1453	± 34
$V_{5,200}=$	229	$(A)^{0.88}$		0.739	.1810	± 43

Table 13. (cont'd).

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{10,2}=$	0.222	$(A)^{1.84}$	$(S_H)^{-0.79}$	0.843	.2420	± 60
$V_{10,5}=$	3.15	$(A)^{1.47}$	$(S_H)^{-0.51}$	0.877	.1704	± 41
$V_{10,10}=$	11	$(A)^{1.28}$	$(S_H)^{-0.33}$	0.887	.1448	± 34
$V_{10,25}=$	35	$(A)^{1.04}$		0.889	.1284	± 29
$V_{10,50}=$	71	$(A)^{1.85}$		0.883	.1251	± 29
$V_{10,100}=$	129	$(A)^{0.95}$		0.842	.1423	± 33
$V_{10,200}=$	214	$(A)^{0.91}$		0.771	.1719	± 41

Table 14. VDF relationships for Region 2 (durations of 2, 3, 5 and 10 days).

REGION 2

Equation	R^2(adj.)	Std. Error (log units)	%
NO EQUATIONS COULD BE DEVELOPED			

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Table 14.   (cont'd).

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$					
$V_{2,5}=$					
$V_{2,10}=$		NO EQUATIONS COULD BE DEVELOPED			
$V_{2,25}=$					
$V_{2,50}=$	3	$(A)^{0.57} (P_{2,24})^{6.55}$	0.940	.1516	±36
$V_{2,100}=$	2.7	$(A)^{0.56} (P_{2,24})^{7.3}$	0.979	.0979	±23
$V_{2,200}=$	3	$(A)^{0.54} (P_{2,24})^{8.04}$	0.962	.1418	±34

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$					
$V_{2,5}=$					
$V_{2,10}=$		NO EQUATIONS COULD BE DEVELOPED			
$V_{2,25}=$					
$V_{3,50}=$	2.4	$(A)^{0.61} (P_{2,24})^{6.54}$	0.953	.1358	±32
$V_{3,100}=$	2.2	$(A)^{0.60} (P_{2,24})^{7.34}$	0.987	.0760	±18
$V_{3,200}=$	2.3	$(A)^{0.57} (P_{2,24})^{8.13}$	0.966	.1372	±32

Table 14. (cont'd).

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$					
$V_{2,5}=$					
$V_{2,10}=$		NO EQUATIONS COULD BE DEVELOPED			
$V_{2,25}=$					
$V_{5,50}=$	2.3 $(A)^{0.61}$	$(P_{2,24})^{6.62}$	0.965	.1181	± 28
$V_{5,100}=$	2.4 $(A)^{0.58}$	$(P_{2,24})^{7.51}$	0.992	.0626	± 14
$V_{5,200}=$	3 $(A)^{0.53}$	$(P_{2,24})^{8.4}$	0.960	.1514	± 36

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$					
$V_{2,5}=$					
$V_{2,10}=$		NO EQUATIONS COULD BE DEVELOPED			
$V_{2,25}=$					
$V_{10,50}=$	2.4 $(A)^{0.65}$	$(P_{2,24})^{6.3}$	0.965	.1149	± 27
$V_{10,100}=$	2.5 $(A)^{0.63}$	$(P_{2,24})^{7.13}$	0.995	.0491	± 12
$V_{10,200}=$	3 $(A)^{0.58}$	$(P_{2,24})^{7.97}$	0.961	.1444	± 34

Table 15. VDF relationships for Region 4 (durations 1, 2, 3, 5 and 10 days).

REGION 4

(1 Day Volumes)   **R4-1D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{1,2}=$	$0.002(A)^{1.0}$	$(P_{2,24})^{6.4}$		0.710	.2650	± 67
$V_{1,5}=$	$0.06(A)^{0.92}$	$(P_{2,24})^{5.5}$	$(S_h)^{-0.44}$	0.784	.1905	± 46
$V_{1,10}=$	$0.4 \ (A)^{0.87}$	$(P_{2,24})^{5.0}$	$(S_h)^{-0.61}$	0.818	.1620	± 39
$V_{1,25}=$	$3 \ \ (A)^{0.82}$	$(P_{2,24})^{4.5}$	$(S_h)^{-0.8}$	0.788	.1694	± 40
$V_{1,50}=$	$7.5 \ (A)^{0.79}$	$(P_{2,24})^{4.2}$	$(S_h)^{-0.91}$	0.712	.2018	± 49
$V_{1,100}=$	$21 \ \ (A)^{0.76}$	$(P_{2,24})^{4.0}$	$(S_h)^{-1.01}$	0.611	.2464	± 62
$V_{1,200}=$	$53 \ \ (A)^{0.73}$	$(P_{2,24})^{3.72}$	$(S_H)^{-1.1}$	0.506	.2968	± 77

(2 Day Volumes)   **R4-2D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$	$0.001(A)^{1.04}$	$(P_{2,24})^{6.8}$		0.752	.2497	± 63
$V_{2,5}=$	$0.1 \ (A)^{0.95}$	$(P2,24)^{5.14}$		0.805	.1869	± 45
$V_{2,10}=$	$0.3 \ (A)^{0.94}$	$(P2,24)^{4.96}$	$(S_h)^{-0.5}$	0.852	.1513	± 36
$V_{2,25}=$	$2 \ \ (A)^{0.904}$	$(P2,24)^{4.3}$	$(S_h)^{-0.66}$	0.834	.1547	± 37
$V_{2,50}=$	$6 \ \ (A)^{0.885}$	$(P2,24)^{3.87}$	$(S_h)^{-0.77}$	0.772	.1838	± 44
$V_{2,100}=$	$18 \ \ (A)^{0.87}$	$(P2,24)^{3.51}$	$(S_h)^{-0.87}$	0.684	.2255	± 56
$V_{2,200}=$	$46 \ \ (A)^{0.854}$	$(P2,24)^{3.18}$	$(S_h)^{-0.95}$	0.586	.2736	± 70

Table 15. (cont'd).

(3 Day Volumes) R4-3D

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$	$7E\text{-}04(A)^{1.1}$	$(P_{2,24})^{7.13}$		0.771	.2440	± 61
$V_{3,5}=$	$0.03(A)^{0.98}$	$(P_{2,24})^{5.45}$		0.824	.1817	± 44
$V_{3,10}=$	$0.18(A)^{0.96}$	$(P_{2,24})^{5.13}$	$(S_h)^{-0.44}$	0.865	.1472	± 35
$V_{3,25}=$	$2\ (A)^{0.93}$	$(P_{2,24})^{4.4}$	$(S_h)^{-0.61}$	0.855	.1458	± 34
$V_{3,50}=$	$0.17(A)^{0.91}$	$(P_{2,24})^{3.9}$	$(S_h)^{-0.75}$	0.800	.1725	± 41
$V_{3,100}=$	$18\ (A)^{0.89}$	$(P_{2,24})^{3.5}$	$(S_h)^{-0.83}$	0.714	.2133	± 52
$V_{3,200}=$	$50\ (A)^{0.88}$	$(P_{2,24})^{3.1}$	$(S_h)^{-0.93}$	0.616	.2611	± 66

(5 Day Volumes) R4-5D

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$	$4.3E\text{-}04(A)^{1.06}$	$(P_{2,24})^{7.54}$		0.795	.2330	± 58
$V_{5,5}=$	$0.02(A)^{0.99}$	$(P_{2,24})^{5.79}$		0.847	.1716	± 41
$V_{5,10}=$	$0.14(A)^{0.97}$	$(P_{2,24})^{5.26}$	$(S_h)^{-0.37}$	0.882	.1391	± 33
$V_{5,25}=$	$1.3\ (A)^{0.95}$	$(P_{2,24})^{4.37}$	$(S_h)^{-0.54}$	0.880	.1330	± 31
$V_{5,50}=$	$5.2\ (A)^{0.93}$	$(P_{2,24})^{3.78}$	$(S_h)^{-0.66}$	0.833	.1565	± 37
$V_{5,100}=$	$19\ (A)^{0.92}$	$(P_{2,24})^{3.24}$	$(S_h)^{-0.78}$	0.757	.1946	± 47
$V_{5,200}=$	$60\ (A)^{0.91}$	$(P_{2,24})^{2.74}$	$(S_h)^{-0.88}$	0.666	.2403	± 60

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Table 15. (cont'd).

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{10,2}= 4E\text{-}04(A)^{1.05}(P_{2,24})^{7.95}$	0.817	.2205	± 54
$V_{10,5}= 0.02(A)^{0.99} (P_{2,24})^{6.21}$	0.865	.1628	± 39
$V_{10,10}= 0.1 (A)^{0.96} (P_{2,24})^{5.19}$	0.886	.1386	± 33
$V_{10,25}= 0.8 (A)^{0.96} (P_{2,24})^{4.55} (S_h)^{-0.38}$	0.891	.1279	± 30
$V_{10,50}= 3 (A)^{0.96} (P_{2,24})^{3.92} (S_h)^{-0.49}$	0.850	.1498	± 35
$V_{10,100}=10 (A)^{0.95} (P_{2,24})^{3.34} (S_h)^{-0.60}$	0.778	.1868	± 45
$V_{10,200}=33 (A)^{0.95} (P_{2,24})^{2.81} (S_h)^{-0.69}$	0.692	.2201	± 54

Table 16. VDF relationships for Region 6 (durations 1, 2, 3, 5 and 10 days).

REGION 6

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{1,2}= 458 (A)^{0.38}$	0.895	.0604	± 14
$V_{1,5}= 10716 (A)^{0.35} (S_l)^{-0.91}$	0.984	.0224	± 5
$V_{1,10}= 45709 (A)^{0.32} (S_l)^{-1.26}$	0.914	.0524	± 12
$V_{1,25}= 0.08 (A)^{0.56} (P)^{-3.48} (P_{2,24})^{15.1}$	0.773	.0976	± 23
$V_{1,50}= 0.014 (A)^{0.59} (P)^{-4.39} (P_{2,24})^{18.6}$	0.647	.1409	± 33
$V_{1,100}= 0.003 (A)^{0.61} (P)^{-5.29} (P_{2,24})^{21.9}$	0.539	.1872	± 45
$V_{1,200}= 9E\text{-}04 (A)^{0.63} (P)^{-6.18} (P_{2,24})^{25}$	0.456	.2347	± 58

Table 16. (cont'd).

(2 Day Volumes)   **R6-2D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$ 525	$(A)^{0.44}$			0.924	.0579	± 13
$V_{2,5}=$ 11221	$(A)^{0.41}$	$(S_l)^{-0.87}$		0.976	.0307	± 7
$V_{2,10}=$ 50119	$(A)^{0.38}$	$(S_l)^{-1.25}$		0.917	.0582	± 13
$V_{2,25}=$ 288404	$(A)^{0.34}$	$(S_l)^{-1.72}$		0.725	.1176	± 27
$V_{2,50}=$ 0.008	$(A)^{0.66}$	$(P_{2,24})^{18.8}$	$(P)^{-4.31}$	0.686	.1416	± 33
$V_{2,100}=$ 0.001	$(A)^{0.70}$	$(P_{2,24})^{22.3}$	$(P)^{-5.16}$	0.598	.1819	± 44
$V_{2,200}=$ 2E-04	$(A)^{0.73}$	$(P_{2,24})^{25.7}$	$(S_l)^{-6.0}$	0.526	.2235	± 55

(3 Day Volumes)   **R6-3D**

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$ 490	$(A)^{0.49}$			0.929	.0619	± 14
$V_{5,5}=$ 9,121	$(A)^{0.45}$	$(S_l)^{-0.82}$		0.971	.0370	± 8
$V_{5,10}=$ 38,905	$(A)^{0.42}$	$(S_l)^{-1.18}$		0.928	.0583	± 14
$V_{5,25}=$ 213,796	$(A)^{0.39}$	$(S_l)^{-1.64}$		0.773	.1117	± 26
$V_{5,50}=$ 0.006	$(A)^{0.71}$	$(P)^{-3.95}$	$(P_{2,24})^{18.1}$	0.730	.1337	± 31
$V_{5,100}=$ 6E-04	$(A)^{0.77}$	$(P)^{-4.7}$	$(P_{2,24})^{21.6}$	0.644	.1710	± 41
$V_{5,200}=$ 6E-05	$(A)^{0.79}$	$(P)^{-5.44}$	$(P_{2,24})^{24.9}$	0.571	.2096	± 51

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Table 16. (cont'd).

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$ 372	$(A)^{0.55}$			0.928	.0709	± 16
$V_{3,5}=$ 5,624	$(A)^{0.53}$	$(S_l)^{-0.73}$		0.968	.0447	± 10
$V_{3,10}=$ 19,953	$(A)^{0.51}$	$(S_l)^{-1.04}$		0.941	.0602	± 14
$V_{3,25}=$ 89,126	$(A)^{0.47}$	$(S_l)^{-1.44}$		0.825	.1080	± 25
$V_{3,50}=$ 0.01	$(A)^{0.77}$	$(P)^{-3.45}$	$(P_{2,24})^{16.3}$	0.780	.1290	± 30
$V_{3,100}=$ 7E-04	$(A)^{0.82}$	$(P)^{-4.04}$	$(P_{2,24})^{19.6}$	0.695	.1642	± 39
$V_{3,200}=$ 6E-05	$(A)^{0.86}$	$(P)^{-4.63}$	$(P_{2,24})^{22.7}$	0.617	.2004	± 49

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{10,2}=$ 246	$(A)^{0.64}$			0.930	.0808	± 19
$V_{10,5}=$ 3,312	$(A)^{0.61}$	$(S_l)^{-0.68}$		0.972	.0478	± 11
$V_{10,10}=$ 8,512	$(A)^{0.59}$	$(S_l)^{-0.84}$		0.955	.0599	± 14
$V_{10,25}=$ 25,119	$(A)^{0.56}$	$(S_l)^{-1.06}$		0.879	.0983	± 23
$V_{10,50}=$ 52,481	$(A)^{0.54}$	$(S_l)^{-1.22}$		0.790	.1317	± 31
$V_{10,100}=$5,889	$(A)^{0.51}$			0.581	.1922	± 46
$V_{10,200}=$8,129	$(A)^{0.49}$			0.472	.2251	± 56

Table 17. VDF relationships for Region 8 (durations 1, 2, 3, 5 and 10 days).

REGION 8

(1 Day Volumes) R8-1D

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{1,2}= 0.73(A)^{5.71} (P)^{1.7}$	0.841	.0935	± 21
$V_{1,5}= 0.1 (A)^{0.60} (P)^{6.57} (P_{2,24})^{-10.1}$	0.925	.0686	± 16
$V_{1,10}= 0.1 (A)^{0.63} (P)^{6.86} (P_{2,24})^{-10.5}$	0.878	.0935	± 22
$V_{1,25}= 2.1 (A)^{0.98} (P)^{10.2} (P_{2,24})^{-21.6} (S_h)^{-0.82}$	0.907	.0889	± 21
$V_{1,50}= 4.3 (A)^{1.07} (P)^{11.0} (P_{2,24})^{-23.9} (S_h)^{-0.98}$	0.883	.1063	± 25
$V_{1,100}= 8.7 (A)^{1.16} (P)^{11.6} (P_{2,24})^{-26.0} (S_h)^{-1.13}$	0.857	.1246	± 29
$V_{1,200}= 18.2(A)^{1.24} (P)^{12.1} (P_{2,24})^{-28.0} (S_h)^{-1.27}$	0.829	.1440	± 34

(2 Day Volumes) R8-2D

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{2,2}= 0.02(A)^{0.71} (P)^{2.72}$	0.905	.0868	±20
$V_{2,5}= 0.01(A)^{0.75} (P)^{2.92}$	0.934	.0753	±17
$V_{2,10}= 0.01(A)^{0.77} (P)^{2.95}$	0.909	.0924	±21
$V_{2,25}= 0.2 (A)^{1.09} (P)^{10.2} (P_{2,24})^{-20.0} (S_h)^{-0.81}$	0.972	.0547	±13
$V_{2,50}= 0.6 (A)^{1.17} (P)^{11.0} (P_{2,24})^{-22.6} (S_h)^{-0.97}$	0.961	.0664	±15
$V_{2,100}= 1.3 (A)^{1.25} (P)^{11.7} (P_{2,24})^{-25.0} (S_h)^{-1.12}$	0.951	.0784	±18
$V_{2,200}= 3.1 (A)^{1.33} (P)^{12.3} (P_{2,24})^{-27.3} (S_h)^{-1.27}$	0.940	.0904	±21

Table 17.   (cont'd).

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$ 0.001 $(A)^{0.8}$ $(P)^{3.29}$				0.939	.0775	± 18
$V_{3,5}=$ 0.002 $(A)^{0.82}$ $(P)^{3.31}$				0.957	.0665	± 15
$V_{3,10}=$ 0.004 $(A)^{0.83}$ $(P)^{3.21}$				0.933	.0847	± 19
$V_{3,25}=$ 0.12$(A)^{1.10}$ $(P)^{9.26}$ $(P_{2,24})^{-17.4}$ $(S_h)^{-0.74}$				0.965	.0626	± 14
$V_{3,50}=$ 0.47$(A)^{1.16}$ $(P)^{9.91}$ $(P_{2,24})^{-19.9}$ $(S_h)^{-0.89}$				0.955	.0722	± 16
$V_{3,100}=$ 1.7 $(A)^{1.22}$ $(P)^{10.5}$ $(P_{2,24})^{-22.1}$ $(S_h)^{-1.03}$				0.945	.0815	± 19
$V_{3,200}=$ 6.03$(A)^{1.27}$ $(P)^{11.0}$ $(P_{2,24})^{-24.2}$ $(S_h)^{-1.16}$				0.935	.0905	± 21

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$ 2.3E-04 $(A)^{0.88}$ $(P)^{3.65}$			0.959	.0692	± 16
$V_{5,5}=$ 5.4E-04 $(A)^{0.89}$ $(P)^{3.59}$			0.971	.0581	± 14
$V_{5,10}=$ 0.0013 $(A)^{0.89}$ $(P)^{3.45}$			0.953	.0753	± 18
$V_{5,25}=$ 0.004 $(A)^{0.88}$ $(P)^{3.22}$			0.920	.0986	± 22
$V_{5,50}=$ 0.01 $(A)^{0.88}$ $(P)^{3.03}$			0.894	.1143	± 27
$V_{5,100}=$ 0.03 $(A)^{0.88}$ $(P)^{2.84}$			0.869	.1285	± 30
$V_{5,200}=$ 0.06 $(A)^{0.87}$ $(P)^{2.64}$			0.843	.1414	± 33

Table 17. (cont'd).

(10 Day Volumes) R8-10D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{10,2}=$ 0.0004	$(A)^{0.93}$	$(P)^{3.49}$	0.965	.0674	± 15
$V_{10,5}=$ 0.001	$(A)^{0.92}$	$(P)^{3.49}$	0.986	.0411	± 9
$V_{10,10}=$ 0.002	$(A)^{0.91}$	$(P)^{3.4}$	0.977	.0528	± 12
$V_{10,25}=$ 0.005	$(A)^{0.9}$	$(P)^{3.25}$	0.957	.0716	± 16
$V_{10,50}=$ 0.01	$(A)^{0.88}$	$(P)^{3.12}$	0.940	.0843	± 19
$V_{10,100}=$0.02	$(A)^{0.86}$	$(P)^{2.99}$	0.921	.0955	± 22
$V_{10,200}=$0.04	$(A)^{0.85}$	$(P)^{2.85}$	0.903	.1056	± 24

Table 18. VDF relationships for Region 10 (durations 1, 2, 3, 5 and 10 days).

REGION 10

(1 Day Volumes) R10-1D

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{1,2}=$ 6.2E+09	$(A)^{0.66}$	$(P_{2,24})^{-11.7}$		0.762	.1496	± 35
$V_{1,5}=$ 6.3E+08	$(A)^{0.62}$	$(P_{2,24})^{-9.49}$		0.768	.1293	± 30
$V_{1,10}=$ 295,121	$(A)^{1.03}$	$(P_{2,24})^{-6.93}$	$(S_l)^{1.08}$	0.792	.1170	± 27
$V_{1,25}=$ 22,388	$(A)^{1.14}$	$(P_{2,24})^{-5.79}$	$(S_l)^{1.45}$	0.750	.1278	± 30
$V_{1,50}=$ 0.32	$(A)^{1.43}$	$(S_l)^{2.13}$		0.642	.1567	± 37
$V_{1,100}=$ 0.2	$(A)^{1.48}$	$(S_l)^{2.33}$		0.606	.1716	± 41
$V_{1,200}=$ 0.12	$(A)^{1.54}$	$(S_l)^{2.53}$		0.565	.1897	± 46

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Table 18. (cont'd).

(2 Day Volumes) — R10-2D

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{2,2} = 3.0E +09(A)^{0.709} (P_{2,24})^{-11.0}$	0.792	.1394	± 33
$V_{2,5} = 2.9E+08(A)^{0.668} (P_{2,24})^{-8.77}$	0.802	.1203	± 28
$V_{2,10} = 1.8E+08(A)^{0.635} (P_{2,24})^{-8.08}$	0.769	.1244	± 29
$V_{2,25} = 33113 \ (A)^{1.12} (P_{2,24})^{-5.36} (S_l)^{1.26}$	0.756	.1268	± 30
$V_{2,50} = 1.2 \ (A)^{1.38} (S_l)^{1.87}$	0.653	.1548	± 37
$V_{2,100} = 0.83 \ (A)^{1.42} (S_l)^{2.03}$	0.605	.1711	± 41
$V_{2,200} = 0.58 \ (A)^{1.47} (S_l)^{2.2}$	0.556	.1901	± 46

(3 Day Volumes) — R10-3D

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{5,2} = 1.2 \ E+09(A)^{0.75} (P_{2,24})^{-10.3}$	0.818	.1304	± 31
$V_{5,5} = 1.1 \ E+08(A)^{0.73} (P_{2,24})^{-8.16}$	0.841	.1090	± 25
$V_{5,10} = 6.8 \ E+07(A)^{0.70} (P_{2,24})^{-7.5}$	0.819	.1123	± 26
$V_{5,25} = 3.0 \ (A)^{1.33} (S_l)^{1.52}$	0.740	.1341	± 32
$V_{5,50} = 3.8 \ (A)^{1.37} (S_l)^{1.67}$	0.701	.1472	± 35
$V_{5,100} = 2.88 \ (A)^{1.42} (S_l)^{1.81}$	0.650	.1650	± 39
$V_{5,200} = 2.14 \ (A)^{1.46} (P_{2,24})^{1.95}$	0.596	.1851	± 45

Table 18. (cont'd).

(5 Day Volumes)   **R10-5D**

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{5,2} = 1.6\ E{+}08(A)^{0.815}\,(P_{2,24})^{-9.04}$	0.854	.1165	$\pm\,27$
$V_{5,5} = 2.4\ E{+}07(A)^{0.805}\,(P_{2,24})^{-7.27}$	0.891	.0930	$\pm\,21$
$V_{5,10} = 1.9\ E{+}07(A)^{0.791}\,(P_{2,24})^{-6.84}$	0.882	.0949	$\pm\,22$
$V_{5,25} = 2.0\ E{+}07(A)^{0.774}\,(P_{2,24})^{-6.6}$	0.822	.1171	$\pm\,27$
$V_{5,50} = 3.8\ (A)^{1.38}\,(S_{l})^{1.41}$	0.757	.1400	$\pm\,33$
$V_{5,100} = 2.88\ (A)^{1.42}\,(S_{l})^{1.53}$	0.707	.1592	$\pm\,38$
$V_{5,200} = 2.14\ (A)^{1.46}\,(P_{2,24})^{1.65}$	0.653	.1803	$\pm\,43$

(10 Day Volumes)   **R10-10D**

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{10,2} = 2.7\ E{+}06\ (A)^{0.91}\,(P_{2,24})^{-6.47}$	0.910	.0911	$\pm\,21$
$V_{10,5} = 1.6\ E{+}06\ (A)^{0.902}\,(P_{2,24})^{-5.64}$	0.935	.0744	$\pm\,17$
$V_{10,10} = 2.8\ E{+}06\ (A)^{0.884}\,(P_{2,24})^{-5.77}$	0.929	.0770	$\pm\,18$
$V_{10,25} = 8.0\ E{+}06\ (A)^{0.862}\,(P_{2,24})^{-6.17}$	0.889	.0970	$\pm\,23$
$V_{10,50} = 1.7\ E{+}07\ (A)^{0.848}\,(P_{2,24})^{-6.51}$	0.842	.1175	$\pm\,27$
$V_{10,100} = 3.6\ E{+}07\ (A)^{0.837}\,(P_{2,24})^{-6.85}$	0.789	.1393	$\pm\,33$
$V_{10,200} = 7.0\ E{+}07\ (A)^{0.828}\,(P_{2,24})^{-7.19}$	0.733	.1613	$\pm\,38$

Table 19. VDF relationships for Region 11 (durations 1, 2, 3, 5 and 10 days).

REGION 11

(1 Day Volumes) R11-1D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{1,2}=$	$2E\text{-}04$	$(A)^{0.98} (P_{2,24})^{7.05}$	0.930	.0957	± 22
$V_{1,5}=$	0.02	$(A)^{0.81} (P_{2,24})^{5.23}$	0.936	.0774	± 18
$V_{1,10}=$	0.09	$(A)^{0.70} (P_{2,24})^{5.12}$	0.975	.0399	± 9
$V_{1,25}=$	0.61	$(A)^{0.60} (P_{2,24})^{4.58}$	0.967	.0039	± 9
$V_{1,50}=$	1.32	$(A)^{0.53} (P_{2,24})^{4.61}$	0.924	.0513	± 12
$V_{1,100}=$	2.82	$(A)^{0.47} (P_{2,24})^{4.54}$	0.856	.0632	± 15
$V_{1,200}=$	5.2	$(A)^{0.42} (P_{2,24})^{4.54}$	0.743	.0766	± 18

(2 Day Volumes) R11-2D

Equation				R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$	$8.0\,E\text{-}05$	$(A)^{0.93} (P_{2,24})^{8.32}$		0.968	.0573	± 12
$V_{2,5}=$	0.01	$(A)^{0764} (P_{2,24})^{6.47}$		0.950	.0601	± 14
$V_{2,10}=$	0.1	$(A)^{0.68} (P_{2,24})^{5.8}$		0.935	.0609	± 14
$V_{2,25}=$	0.5	$(A)^{0.59} (P_{2,24})^{5.3}$		0.903	.0643	± 15
$V_{2,50}=$	0.11	$(A)^{0.66} (P_{2,24})^{5.78}$	$(S_l)^{0.48}$	0.934	.0477	± 11
$V_{2,100}=$	0.2	$(A)^{0.62} (P_{2,24})^{5.72}$	$(S_l)^{0.51}$	0.889	.0559	± 12
$V_{2,200}=$	0.33	$(A)^{0.58} (P_{2,24})^{5.72}$	$(S_l)^{0.54}$	0.807	.0678	± 15

Table 19. (cont'd).

(3 Day Volumes)   R11-3D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$ 8.5	$(A)^{0.95}$	$(P_{2,24})^{8.43}$	0.970	.0559	± 13
$V_{3,5}=$ 0.02	$(A)^{0.78}$	$(P_{2,24})^{6.52}$	0.962	.0535	± 12
$V_{3,10}=$ 0.1	$(A)^{0.7}$	$(P_{2,24})^{5.8}$	0.957	.0514	± 12
$V_{3,25}=$ 0.7	$(A)^{0.61}$	$(P_{2,24})^{5.21}$	0.939	.0528	± 12
$V_{3,50}=$ 2.0	$(A)^{0.55}$	$(P_{2,24})^{4.93}$	0.910	.0579	± 13
$V_{3,100}=$ 4.7	$(A)^{0.5}$	$(P_{2,24})^{4.77}$	0.857	.0665	± 15
$V_{3,200}=$ 9.6	$(A)^{0.45}$	$(P_{2,24})^{4.66}$	0.768	.0776	± 18

(5 Day Volumes)   R11-5D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$ 1.0 E-04	$(A)^{0.98}$	$(P_{2,24})^{8.48}$	0.974	.0545	± 12
$V_{5,5}=$ 0.012	$(A)^{0.83}$	$(P_{2,24})^{6.52}$	0.977	.0441	± 10
$V_{5,10}=$ 0.11	$(A)^{0.75}$	$(P_{2,24})^{5.72}$	0.980	.0380	± 9
$V_{5,25}=$ 0.82	$(A)^{0.67}$	$(P_{2,24})^{5.02}$	0.974	.0385	± 9
$V_{5,50}=$ 2.7	$(A)^{0.61}$	$(P_{2,24})^{4.66}$	0.956	.0463	± 10
$V_{5,100}=$ 7.1	$(A)^{0.56}$	$(P_{2,24})^{4.41}$	0.918	.0585	± 13
$V_{5,200}=$ 16.22	$(A)^{0.52}$	$(P_{2,24})^{4.22}$	0.854	.0731	± 16

Table 19. (cont'd).

(10 Day Volumes)   **R11-10D**

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{10,2} = 1.05\ \text{E-04}(A)^{1.03}\ (P_{2,24})^{8.5}$	0.978	.0542	± 12
$V_{10,5} = 0.01\ (A)^{0.92}\ (P_{2,24})^{6.47}$	0.987	.0381	± 9
$V_{10,10} = 0.12\ (A)^{0.85}\ (P_{2,24})^{5.5}$	0.990	.0318	± 7
$V_{10,25} = 1.3\ (A)^{0.77}\ (P_{2,24})^{4.52}$	0.984	.0375	± 9
$V_{10,50} = 5.5\ (A)^{0.72}\ (P_{2,24})^{3.93}$	0.969	.0492	± 12
$V_{10,100} = 10965\ (A)^{0.56}$	0.921	.0757	± 17
$V_{10,200} = 15488\ (A)^{0.53}$	0.892	.0856	± 19

Table 20. VDF relationships for Region 12 (durations 1, 2, 3, 5 and 10 days).

REGION 12

(1 Day Volumes)   **R12-1D**

Equation	R^2(adj.)	Std. Error (log units)	%
$V_{1,2} = 1778\ (A)^{0.497}\ (S_h)^{-0.61}$	0.863	.1011	± 23
$V_{1,5} = 7586\ (A)^{0.462}\ (S_h)^{-0.87}$	0.951	.0654	± 15
$V_{1,10} = 11221\ (A)^{0.497}\ (S_h)^{-0.99}$	0.981	.0442	± 10
$V_{1,25} = 12589\ (A)^{0.572}\ (S_h)^{-1.11}$	0.976	.0568	± 13
$V_{1,50} = 12023\ (A)^{0.641}\ (S_h)^{-1.18}$	0.953	.0878	± 19
$V_{1,100} = 10472\ (A)^{0.716}\ (S_h)^{-1.24}$	0.922	.1235	± 29
$V_{1,200} = 8512\ (A)^{0.79}\ (S_h)^{-1.3}$	0.890	.1605	± 38

Table 20. (cont'd).

(2 Day Volumes)   R12-2D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{2,2}=$ 200	$(A)^{0.76}$		0.874	.1009	± 24
$V_{2,5}=$ 4571	$(A)^{0.58}$	$(S_h)^{-0.7}$	0.971	.0521	± 12
$V_{2,10}=$ 5623	$(A)^{0.63}$	$(S_h)^{-0.78}$	0.992	.0294	± 7
$V_{2,25}=$ 5370	$(A)^{0.72}$	$(S_h)^{-0.85}$	0.988	.0409	± 9
$V_{2,50}=$ 4467	$(A)^{0.79}$	$(S_h)^{-0.89}$	0.970	.0706	± 16
$V_{2,100}=$ 3468	$(A)^{0.87}$	$(S_h)^{-0.92}$	0.945	.1032	± 23
$V_{2,200}=$ 2571	$(A)^{0.96}$	$(S_h)^{-0.94}$	0.919	.1364	± 31

(3 Day Volumes)   R12-3D

Equation			R^2(adj.)	Std. Error (log units)	%
$V_{3,2}=$ 200	$(A)^{0.81}$		0.928	.0788	± 18
$V_{3,5}=$ 2138	$(A)^{0.69}$	$(S_h)^{-0.53}$	0.986	.0372	± 9
$V_{3,10}=$ 2291	$(A)^{0.75}$	$(S_h)^{-0.58}$	0.997	.0196	± 3
$V_{3,25}=$ 1950	$(A)^{0.85}$	$(S_h)^{-0.62}$	0.987	.0445	± 10
$V_{3,50}=$ 1514	$(A)^{0.93}$	$(S_h)^{-0.64}$	0.968	.0745	± 17
$V_{3,100}=$ 86	$(A)^{1.23}$		0.916	.1310	± 31
$V_{3,200}=$ 58	$(A)^{1.32}$		0.901	.1533	± 36

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Table 20. (cont'd).

Equation		R^2(adj.)	Std. Error (log units)	%
$V_{5,2}=$	$163\,(A)^{0.88}$	0.972	.0521	± 12
$V_{5,5}=$	$246\,(A)^{0.93}$	0.981	.0451	± 11
$V_{5,10}=$	$224\,(A)^{0.99}$	0.982	.0468	± 11
$V_{5,25}=$	$170\,(A)^{1.09}$	0.975	.0616	± 14
$V_{5,50}=$	$126\,(A)^{1.16}$	0.965	.0786	± 18
$V_{5,100}=$	$94\,\,(A)^{1.24}$	0.952	.0979	± 22
$V_{5,200}=$	$66\,\,(A)^{1.32}$	0.939	.1181	± 27

Equation		R^2(adj.)	Std. Error (log units)	%
$V_{10,2}=$	$163\,(A)^{0.92}$	0.971	.0554	± 12
$V_{10,5}=$	$252\,(A)^{0.96}$	0.990	.0338	± 7
$V_{10,10}=$	$234\,(A)^{1.02}$	0.994	.0270	± 5
$V_{10,25}=$	$174\,(A)^{1.11}$	0.991	.0375	± 9
$V_{10,50}=$	$132\,(A)^{1.18}$	0.984	.0527	± 12
$V_{10,100}=$	$96\,\,(A)^{1.26}$	0.976	.0694	± 16
$V_{10,200}=$	$68\,\,(A)^{1.33}$	0.967	.0864	± 19

4.1.4 Limitations

Certain limitations apply to the use of equations developed in this research. It is strongly recommended that the equations **NOT** be used outside the range of the data used in their development. The range of data used to produce these equations are listed individually for each region in Table 21. The terms are defined as follows (Minitab, Inc., 1993):

N:	The number of data points
MEAN:	Mean value of the data points.
MEDIAN:	Median value of the data points.
STDEV:	Standard Deviation of the data points.
SEMEAN:	Standard error of the mean, computed as STDEV/ SQRT(N)
MIN:	Minimum value of the data points
MAX:	Maximum value of the data points.
Q1:	It is the first quartile of the data (observation at position (N+1)/4 of the ordered data).
Q3:	It is the third quartile of the data (observation at position 3(N+1)/4 of the ordered data).

Both the first and third quartile's should be fairly representative of the distribution of the variable and reflect the strength of the regression equation within that range. For example, Region 11 has ten stations representing watersheds having contributing drainage areas ranging between 336 and 9329 sq. mi. However, eight of these watersheds have contributing drainage areas between 2724 and 9329 sq. mi. while only two have drainage areas between 336 and 2724 sq. mi. Examination of the quartile values under Region 11 in the tables below confirms this. Clearly, in this case, the regression equation is expected to be stronger in the range 2724 to 9329 sq. mi.

Table 21. Range of data used in developing the regression equations in various regions.

Region 1.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	14	1295	821	1062	284	303	3552	466	2148
S_l	14	10.391	10.24	2.132	0.57	7.05	16.72	9.398	10.9
S_h	14	27.52	32.62	14.57	3.89	5.84	47.93	12.38	36.7

Region 2.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	6	1725	1343	1249	510	464	3709	688	2975
$P_{2,24}$	6	2.427	2.255	0.476	0.194	2.00	3.21	2.037	2.895

Region 4.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	26	1732	1250	1425	280	346	5443	583	2516
$P_{2,24}$	26	3.455	3.53	0.3064	0.0601	3.00	3.91	3.145	3.653
S_h	26	6.405	5.995	3.321	0.651	2.98	19.69	4.242	7.345

Region 6.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	9	4257	4493	2992	997	469	8561	977	6792
S_l	9	8.899	9.23	1.536	0.512	6.42	10.98	7.41	10.21
P	9	23.833	23.00	2.092	0.697	21.5	27.0	22.0	26.0
$P_{2,24}$	9	3.7878	3.75	0.1432	0.0477	3.6	4.03	3.675	3.92

Table 21. (cont'd).

Region 8.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	9	1789	968	2205	735	321	7065	502	2498
S_h	9	10.5	7.58	7.19	2.4	3.79	24.76	5.57	15.16
P	9	34.11	32.00	4.28	1.43	28.0	41.0	31.0	38.0
$P_{2,24}$	9	4.1567	4.05	0.2399	0.08	3.85	4.55	3.965	4.36

Region 10.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	16	957	630	695	174	365	2774	411	1363
S_l	16	4.158	4.01	1.279	0.32	2.4	6.86	3.215	4.878
$P_{2,24}$	16	4.35	4.37	0.1446	0.036	4.14	4.69	4.24	4.43

Region 11.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	10	4692	3561	3262	1031	336	9329	2258	8021
S_l	10	2.084	1.87	0.893	0.282	1.42	4.47	1.53	2.22
$P_{2,24}$	10	4.724	4.66	0.234	0.074	4.5	5.27	4.588	4.775

Region 12.

Variable	N	MEAN	MEDIAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
A	7	1031	727	919	347	325	2800	376	1741
S_h	7	5.594	5.3	2.276	0.86	3.07	9.58	3.88	7.15

4.2 SMALL WATERSHEDS

Two years of hourly streamflow data was compiled at over fifty sites throughout the state of Texas to study the applicability of the methodology for small watersheds (Chapter III). Isolated single peak events were identified throughout the period of record at each of the locations. Some of the sites were not included owing to the non-availability of such events. Data at the remaining sites were analyzed and the main hydrograph characteristics, namely, Q_p, t_p, V and t_b were compiled. Additionally, the volumes before and after the peak discharge, V_a and V_b, respectively, were computed for the selected events. Table 22 lists watersheds along with the hydrograph information. The values of 'α' and 'β' were computed using equations (22) through (29). The correlation matrix of the compiled data is shown in Table 23. As the matrix clearly shows, 'α' and 'β' show very poor correlations with any of the basin or hydrograph characteristics. In the absence of regional 'α' and 'β' information, the next best approach would be to have regionalized t_p and Q_p values. It is fairly easy to obtain regionalized Q_p values (Work is currently underway at the U. S. Geological Survey to regionalize flood peak information). However, Table 23 clearly demonstrates that t_p does not exhibit a strong correlation with any of the basin characteristics. Regionalization with such weak correlations is not a very encouraging thought. The time parameters, t_p, t_b and t_g show fairly strong correlations as expected. However, they cannot be estimated independently. The last alternative would be to regionalize flood volumes directly with the flood peaks and/or basin characteristics. Flood volumes showed strong correlations with both basin area and flood peaks. Hence, stepwise regression procedures were used to identify the independent variables and develop regression equations. Relevant statistical procedures have already been discussed earlier. The resulting equation with an adjusted R square value of 0.82 is:

$$V = 0.146 \cdot Q_p^{1.2} \tag{30}$$

Including the drainage area in the above relationship did not significantly enhance the R square nor reduce the standard error. Hence it was omitted in the development of (30).

Table 22 Summary information of Watersheds used in the Small Watershed Study.

Gage #	Contrib. Drainage Area (mi^^)	Length of Basin (mi)	Shape Factor	Slope (ft/mile)	tp (hrs.)	tb (hrs.)	tg (hrs.)	Qp (cfs.)	Vol (ac. ft.)	Va (ac. ft.)	Vb (ac. ft.)	alpha	beta (hrs.)
8103900	33.30	11.44	3.93	36.15	2.00	5.00	3.50	1130.00	276.00	101.00	175.00	2.33	1.50
8103900	33.30	11.44	3.93	36.15	4.00	11.00	5.60	1850.00	843.00	338.00	505.00	3.50	1.60
8103900	33.30	11.44	3.93	36.15	3.00	11.00	5.10	1950.00	772.00	158.00	614.00	2.43	2.10
8049700	62.80	18.94	5.71	15.07	12.00	29.00	13.80	4080.00	5028.00	2293.00	2734.00	7.67	1.80
8049700	62.80	18.94	5.71	15.07	3.00	20.00	10.20	2580.00	2224.00	328.00	1896.00	1.42	7.20
8049700	62.80	18.94	5.71	15.07	2.00	22.00	10.20	2560.00	2311.00	389.00	1922.00	1.24	8.20
8105100	83.10	28.01	9.44	16.04	4.00	15.00	6.50	4630.00	3226.00	1241.00	1985.00	2.60	2.50
8105100	83.10	28.01	9.44	16.04	6.00	21.00	9.70	3630.00	3020.00	997.00	2023.00	2.62	3.70
8105100	83.10	28.01	9.44	16.04	2.00	10.00	4.80	3600.00	1263.00	335.00	928.00	1.71	2.80
8104900	133.00	38.03	10.88	19.84	24.00	59.00	28.20	11000.00	20183.00	9018.00	11165.00	6.71	4.20
8104900	133.00	38.03	10.88	19.84	7.00	28.00	12.40	5570.00	5287.00	1484.00	3802.00	2.30	5.40
8104900	133.00	38.03	10.88	19.84	4.00	12.00	6.55	4840.00	1239.00	266.00	973.00	2.57	2.55
8198500	241.00	53.45	11.85	25.53	6.00	21.00	9.70	10600.00	6812.00	2209.00	4603.00	2.62	3.70
8198500	241.00	53.45	11.85	25.53	3.00	19.00	5.30	28100.00	5455.00	1990.00	3465.00	2.30	2.30
8198500	241.00	53.45	11.85	25.53	9.00	19.00	10.60	10200.00	9390.00	4272.00	5118.00	6.63	1.60
7343000	276.00	41.32	6.18	7.15	4.00	26.00	4.60	22900.00	13400.00	3129.00	10271.00	7.67	0.60
7343000	276.00	41.32	6.18	7.15	4.00	26.00	4.50	39100.00	24243.00	5610.00	18633.00	9.00	0.50
7343000	276.00	41.32	6.18	7.15	6.00	31.00	11.50	23700.00	19646.00	4398.00	15248.00	2.09	5.50
8051500	295.00	48.56	7.99	10.13	14.00	28.00	15.30	11300.00	18178.00	8561.00	9617.00	11.77	1.30
8051500	295.00	48.56	7.99	10.13	13.00	33.00	18.00	5870.00	7885.00	2702.00	5183.00	3.60	5.00
8051500	295.00	48.56	7.99	10.13	6.00	17.00	8.50	5880.00	3708.00	1579.00	2129.00	3.40	2.50
8093500	308.00	38.85	4.90	4.05	10.00	28.00	14.60	7210.00	9649.00	3071.00	6578.00	3.17	4.60
8093500	308.00	38.85	4.90	4.05	9.00	18.00	10.30	5110.00	3999.00	1796.00	2203.00	7.92	1.30
8093500	308.00	38.85	4.90	4.05	8.00	17.00	9.00	3400.00	2891.00	1461.00	1430.00	9.00	1.00
8066170	57.00	12.82	2.88	12.80	3.00	16.00	7.60	5886.00	3439.00	492.00	2948.00	1.65	4.60
8066170	57.00	12.82	2.88	12.80	12.00	45.00	19.50	4156.00	6450.00	1931.00	4520.00	2.60	7.50
8066170	57.00	12.82	2.88	12.80	6.00	21.00	9.04	3131.00	2683.00	1044.00	1640.00	2.97	3.04

Table 23. Correlation Matrix of Hydrograph Components and Basin Characteristics

	darea	length	S_h	S_l	t_p	t_b	t_g	Q_p	Vol	V_a	V_b	alpha
tp	0.439	0.380	0.143	-0.339								
tb	0.421	0.369	0.148	-0.395	0.737							
tg	0.246	0.223	0.104	-0.261	0.840	0.804						
Qp	0.740	0.719	0.428	-0.343	0.262	0.536	0.093					
V	0.712	0.647	0.306	-0.501	0.626	0.849	0.538	0.849				
Va	0.740	0.683	0.343	-0.480	0.753	0.801	0.569	0.778	0.953			
Vb	0.676	0.612	0.285	-0.488	0.542	0.843	0.499	0.860	0.989	0.900		
α	0.512	0.411	0.089	-0.407	0.616	0.310	0.186	0.384	0.495	0.644	0.400	
β	-0.272	-0.201	-0.005	0.170	0.048	0.287	0.530	-0.267	-0.056	-0.163	-0.001	-0.735

4.3 Window Test

The window test was conducted to define the words 'large' and 'small' as applied to these watersheds. Watershed characteristics such as drainage area, basin shape, elongation ratio and rotundity were compiled for 38 watersheds in order to relate these characteristics to the behavior of individual watersheds.

As column (9) of Table 10 shows, the percentage of events that recorded both the annual maximum daily mean flow and the annual peak tends to rise with watershed size. Figure 15 shows a graphical representation of the same. Similarly, the Maximum Daily Mean (MDM)/Peak ratio also shows an increasing trend as a function of watershed size, but no definite relationship could be established (Fig. 15).

Plots of the percentages and ratios as a function of basin characteristics provided no additional information, nor did multiple-regression analyses establish any quantitative relationship. The ratios were, however, found to drop with increasing watershed slopes. There is an implication in this observation. Smaller watersheds generally tend to be steeper. So, when the ratios drop with increasing slopes, they must by association, rise with increasing drainage area. This is exactly the behavior that was predicted (Chapter III).

Of the thirty eight watersheds used in this study, 36 are at least 100 $mi.^2$ in size and 29 are at least 200 $mi.^2$. Of the 29 watersheds, 17 (59%) have an MDM/Peak ratio of at least 0.8 and 24 (83%) have at least 80 percent of the annual maximum peaks and means recorded for the same event. Of the 36 watersheds (that are at least 100 $mi.^2$), it is the same 17 watersheds (47%) that still have an MDM/Peak ratio of at least 0.8, and 29 watersheds (80%) have annual peaks and maximum means occur for the same event.

Following the discussion presented in the preceeding paragraphs, and examination of the tables and plots included in the preceeding pages, it can be seen that the boundary between small and large watersheds lies in the 200 to 300 square mile range, but a more precise area could not be defined. The cutoff point of 300 square miles chosen for this study appears to be reasonable.

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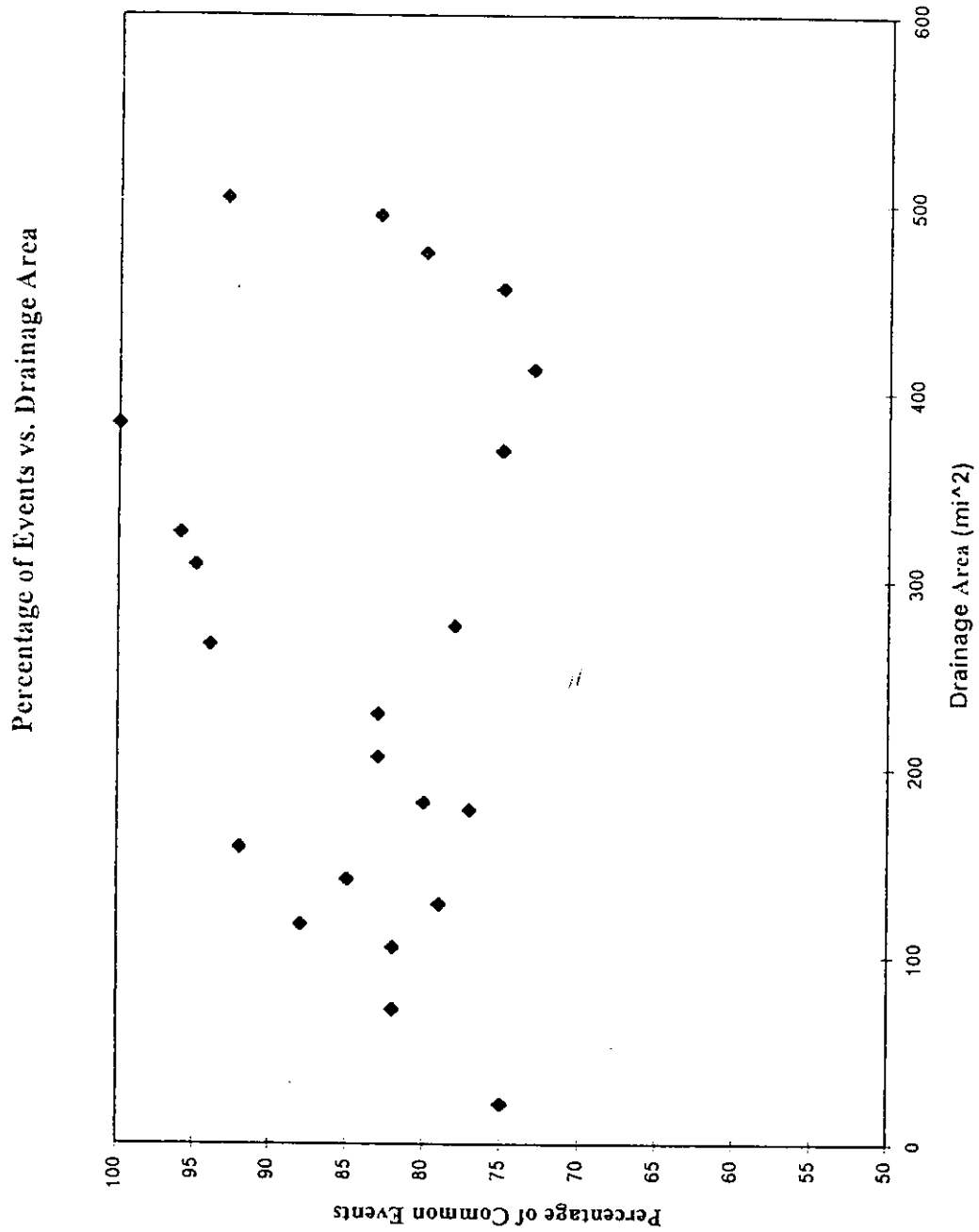
Figure 15. Percentage of events having MDM's and Peak's recorded for the same event as a function of drainage area.
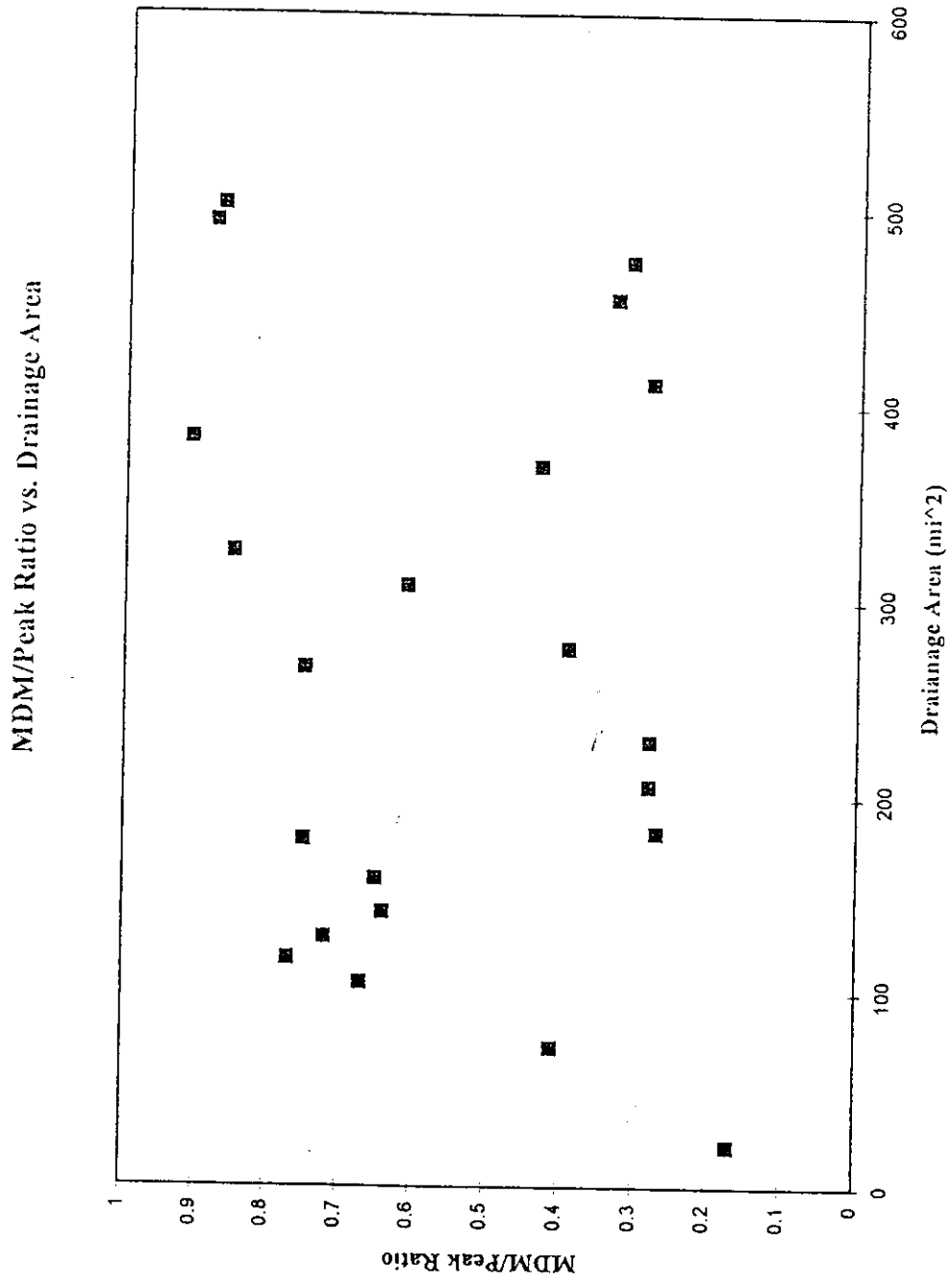
Figure 16. MDM/Peak ratio as a function of drainage area.

CHAPTER V

SUMMARY AND CONCLUSIONS

The focus of this research was to evaluate current methodologies used to estimate flood volumes, and develop new ones, if necessary. To this end, a successful attempt was made to develop techniques to estimate flood volumes for different recurrence intervals. The analyses covered only non-urban, unregulated watersheds in the state of Texas as a case study.

For large watersheds, a technique was presented whereby flood volumes, over various durations, can be estimated directly from recorded runoff data without resorting to rainfall-runoff modeling. The technique was successfully used to estimate volumes at most non-urban, unregulated, gaged watersheds in Texas. In addition, extreme volumes were estimated for different frequencies (return periods) by fitting the log Pearson type 3 distribution to these flood volumes (for various durations). These were subsequently extended to ungaged locations through multiple regression with basin and climatic characteristics. Meaningful relationships could be developed for most of the state. However, relationships could not be developed for certain portions of the state. This study has thus provided:

(1) A methodology to estimate flood volumes for various duration-frequencies at ungaged sites;

(2) Flood volume-duration-frequencies for 207 rural, unregulated sites in Texas that have a contributing drainage area of at least 300 square miles;

(3) Regression relationships for estimating flood volume-duration-frequencies at ungaged sites in seven of the twelve new hydrologic regions.

(4) An equation to estimate flood volumes at ungaged sites that are less than 300 square miles in size. (The duration aspect however could not be incorporated).

(5) A methodology, based on watershed response times, to identify the boundary between small and large watersheds.

The regionalized volume-duration-frequency information should be of immediate use to practicing engineers throughout the state. As more data becomes available at these sites, and with the possible addition of some more gages, similar equations could possibly be developed for all regions.

In the case of small watersheds, it was shown analytically that the gamma function can be used to replicate runoff hydrographs. This represents a significant advance in our ability to estimate runoff volumes for different durations. However, it must be noted that the gamma function enables replication of single peak events only and should not be used for intensive design work. Extreme volumes of flow are usually produced by multiple events or prolonged storm activity. Therefore, the technique presented here should be used with care. Also, with the analysis of more events at more sites, the time to peak can be expressed empirically as a function of a combination of basin characteristics and the peak discharge. Equation (27) can be readily used to generate a hydrograph if the time to peak and the peak discharge can be estimated (empirically or otherwise) for any watershed. Equations (28) and (29) relate the gamma parameters as a functions of the hydrograph characteristics. They can also be related to basin characteristics enabling easier determination of the hydrograph shape.

A methodology was also presented and tests of which allows betterquantification of the boundary between small and large watersheds. Although the results from this test were not conclusive, with more data the test appears likely to better define the cut-off point.

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APPENDIX I
**(List of non-urban unregulated watersheds
that have daily mean flow data)**

"TXUNREG.DV" --A FILE PRESENTING GAGES AND SELECTED CHARACTERISTICS FOR USGS STREAMFLOW-GAGING STATIONS IN TEXAS WITH NON-URBAN WATERSHEDS AND PERIOD OF RECORD AVAILABLE FOR FLOOD-VOLUME FREQUENCY ANALYSIS

PERIOD OF RECORD AND SELECTED CHARACTERISTICS FOR USGS STREAMFLOW-GAGING STATIONS IN TEXAS WITH NON-URBAN WATERSHEDS AND UNREGULATED FLOOD DATA. DAILY-MEAN DISCHARGE VALUES EXIST FOR THE PERIOD OF RECORD SHOWN FOR EACH GAGE. FOR SOME GAGES, DATA EXISTS AFTER THE END OF THE PERIOD OF RECORD SHOWN HERE--THAT DATA REPRESENTS FLOW AFFECTED BY REGULATION FROM RESERVOIRS

GAGE NUMBER	YEARS OF DATA	PERIOD OF RECORD BEGIN	END	COUNTY NO.	HYDRO-LOGIC UNIT NO.	LATITUDE DDMMSS	LONGITUDE DDDMMSS	DRAINAGE AREA (SQ. MI.)	CONTRIBUTING DRAIN. AREA (SQ MI)	NAME OF GAGING STATION
07227448	6	1968	1973	205	11090102	354005	1022850	3560.00	-	PUNTA DE AGUA CREEK NEAR CHANNING, TEX. (DISC)
07227470	9	1969	1977	359	11090105	353108	1021505	10536.00	14713.00	CANADIAN RIVER AT TASCOSA, TEX.(DISC)
07227500	55	1924	1990	375	11090105	352813	1015245	19445.00	15376.00	CANADIAN RIVER NR AMARILLO, TX
07227920	15	1975	1989	233	11090106	353953	1012102	134.00	-	DIXON CREEK NR BORGER, TX
07228000	26	1938	1963	211	11090106	355606	1002213	22866.00	18178.00	CANADIAN RIVER NR CANADIAN, TX
07235500	35	1945	1979	195	11100104	361208	1011820	960.00	440.00	PALO DURO CREEK NEAR SPEARMAN,TEX(DISC)
07295500	34	1938	1990	295	11100203	361419	1001631	697.00	475.00	WOLF CREEK AT LIPSCOMB, TX
07297500	21	1941	1973	117	11120103	345055	1021002	1968.00	538.00	TIERRA BLANCA CR AB BUF LK NR UMBARGER,TEX(DISC)
07297910	15	1924	1949	381	11120103	350098	1015329	3369.00	711.00	PRAIRIE DOG TOWN F RED R NR CANYON, TEX.(DISC)
07298000	23	1968	1990	11	11120103	345015	1012449	4211.00	930.00	PDTF RED RIVER NR WAYSIDE, TX
07298500	31	1941	1973	437	11120103	343334	1014233	189.00	65.00	NORTH TULE DRAW AT RES. NEAR TULIA, TEX. (DISC)
07299200	11	1952	1962	191	11120103	347740	1005625	6082.00	1581.00	PRAIRIE DOG TOWN FORK RED R NR BRICE TEX (DISC)
07299300	17	1964	1980	191	11120105	343423	1004443	6792.00	2023.00	PDTF RED RIVER NR LAKEVIEW,TX(DISC)
07299500	14	1968	1981	191	11120105	343227	1004613	139.00	-	LITTLE RED RIVER NR TURKEY, TX (DISC)
07299512	12	1924	1947	191	11120105	343020	1002610	7293.00	4769.00	PDTF RED RIVER NEAR ESTELLINE,TEX(DISC)
07299540	7	1975	1981	75	11120105	343420	1002000	65.50	-	JONAH CREEK AT WEIR NR ESTELLINE,TX(DISC)
07299570	26	1965	1990	75	11130101	343409	1001137	7725.00	2958.00	PDTF RED RIVER NR CHILDRESS, TX
07299670	23	1960	1982	197	11130101	342447	994403	8321.00	3552.00	RED RIVER NR QUANAH, TX
07299850	22	1962	1983	197	11130101	342116	994424	303.00	303.00	GROESBECK CREEK AT S.H. G NR QUANAH, TX
07300000	5	1960	1964	129	11130101	350010	1005330	457.00	-	SALT F RED R NR CLARENDON TEX (DISC)
07301300	15	1953	1967	87	11120202	345727	1001314	1222.00	1013.00	SALT FORK RED RIVER NR WELLINGTON,TX
07301410	27	1964	1990	483	11120302	351551	1001429	1082.00	703.00	NORTH FORK RED RIVER NR SHAMROCK, TX
07301500	14	1961	1990	483	11120302	352823	1000714	287.00	267.00	SWEETWATER CREEK NR KELTON, TX
07307500	29	1946	1959	153	11130103	341424	1010703	293.00	35.00	OUITAQUE CREEK NEAR QUITAQUE,TEX(DISC)
07307600	14	1974	1979	101	11130103	341630	1001705	1434.00	-	N PEASE RIVER NR CHILDRESS,TEX(DISC)
07307750	6	1974	1979	101	11130104	341128	1001803	1086.00	1021.00	MIDDLE PEASE RIVER NEAR PADUCAH,TEX(DISC)
07307760	6	1980	1980	101	11130204	341339	1001238	1128.00	-	MIDDLE PEASE RIVER NR PADUCAH,TX(DISC)
07307800	1	1960	1990	101	11130105	340545	1000424	2754.00	2195.00	PEASE RIVER NR CHILDRESS, TX
07308000	25	1960	1990	155	11130105	341044	994347	3037.00	2478.00	PEASE RIVER NEAR CROWELL, TEX (DISC)
07308200	23	1924	1947	487	11130105	340636	991640	3488.00	2929.00	PEASE RIVER NR VERNON, TX
07308500	30	1960	1989	485	11130105	335702	983153	2057.00	1463.00	RED RIVER NR BURKBURNETT, TX
07311600	31	1962	1990	101	11130204	335212	1000052	540.00	-	NORTH WICHITA RIVER NR PADUCAH,TX(DISC)
07311622	21	1971	1976	155	11130204	335112	995648	591.00	-	NORTH WICHITA RIVER NEAR CROWELL,TEX(DISC)
07311648	6	1971	1976	155	11130204	334914	995744	161.00	-	MIDDLE WICHITA RIVER NEAR TRUSCOTT,TEX(DISC)
07311700	6	1961	1990	275	11130204	333729	994710	937.00	-	NORTH WICHITA RIVER NR TRUSCOTT, TX
07311780	30	1971	1976	269	11130205	333720	1001304	239.00	-	SOUTH WICHITA RIVER NEAR GUTHRIE,TEX(DISC)
07311782	6	1988	1990	269	11130205	333918	1001231	223.00	-	SOUTH WICHITA R. AT LOW FLOW DAM NR GUTHRIE, TX
07311783	3	1987	1990	269	11130205	333839	1001231	223.00	-	SOUTH WICHITA R. BLW LOW FLOW DAM NR GUTHRIE, TX
07311790	4	1971	1979	269	11130205	334201	1000049	499.00	-	SOUTH WICHITA RIVER AT ROSS RANCH NR BENJAMIN,TX
07311800	9	1961	1990	275	11130205	335421	994802	584.00	-	SOUTH WICHITA RIVER NR BENJAMIN, TX
07311900	30	1961	1979	23	11130206	335434	992318	1874.00	-	WICHITA RIVER NEAR SEYMORE,TEX(DISC)
07312200	19	1961	1979	485	11130206	333945	985417	652.00	-	BEAVER CREEK NR ELECTRA, TX
07312500	19	1900	1901	485	11130207	334846	983200	3140.00	-	WICHITA RIVER AT WICHITA FALLS, TX
07314500	2	1932	1946	9	11130206	335355	983646	401.00	1054.00	LITTLE WICHITA RIVER NR ARCHER CITY, TX
07315200	15	1964	1990	77	11130201	334208	980505	178.00	-	EAST FORK LITTLE WICHITA RIVER NR HENRIETTA, TX
07315400	27	1959	1959	337	11130201	332832	980405	1350.00	-	LITTLE WICHITA R N RINGGOLD TEX (DISC)
07316200	8	1969	1976	181	11130210	335026	965051	26.00	-	MINERAL CREEK NEAR SADLER, TEX. (DISC)
07332600	23	1963	1985	147	11140101	334107	961252	72.00	-	BOIS D ARC CREEK NR RANDOLPH, TX (DISC)
07336750	11	1969	1980	387	11140106	333200	951555	75.40	-	LITTLE PINE CREEK NEAR KANAWHA,TEX(DISC)
07336800	16	1962	1977	387	11140106	333636	945941	100.00	-	PECAN BAYOU NEAR CLARKSVILLE, TEX.(DISC)

Station	Yrs	Begin	End	Seq	HUC	Lat	Long	Value		Station Name
07343470	11	1980	1990	231	11140301	331311	955145	189.00	-	SOUTH SULPHUR RIVER NR COMMERCE, TX
07343500	48	1943	1990	119	11140301	332120	953539	527.00	-	SOUTH SULPHUR RIVER NR COOPER, TX
07343000	41	1950	1990	277	11140301	332829	953515	276.00	-	NORTH SULPHUR RIVER NR COOPER, TX
07343200	34	1957	1990	449	11140301	332310	950756	1365.00	-	SULPHUR RIVER NR TALCO, TX
07343300	11	1964	1974	387	11140302	333251	950533	69.00	-	CUTHAND CREEK NR BOGATA, TEX. (DISC)
07343500	41	1950	1990	449	11140303	331920	950533	494.00	-	WHITE OAK CREEK NR TALCO, TX
07344486	47	1910	1956	37	11140302	331500	951022	2774.00	-	SULPHUR RIVER NR DARDEN, TEX. (DISC)
07344500	10	1981	1990	159	11140305	325832	943700	23.40	-	BRUSHY CREEK AT SCROGGINS, TX
07345000	27	1943	1969	63	11140305	330115	951103	366.00	-	BIG CYPRESS CREEK NR PITTSBURG, TX
07346000	34	1944	1977	343	11140306	330758	945255	72.00	-	BOGGY CREEK NEAR DAINGERFIELD, TEX. (DISC)
07346045	45	1913	1957	315	11140306	324458	944715	850.00	-	BIG CYPRESS CREEK NR JEFFERSON, TX
07346050	22	1969	1990	315	11140306	324640	942955	365.00	-	BLACK CYPRESS BAYOU AT JEFFERSON, TX
07346070	28	1963	1990	459	11140307	324021	942126	383.00	-	LITTLE CYPRESS CREEK NR ORE CITY, TX
07346140	45	1946	1990	315	11140306	324250	944503	675.00	-	LITTLE CYPRESS CREEK NR JEFFERSON, TX
08017200	26	1965	1990	67	11140306	330314	941724	48.00	-	FRAZIER CREEK NR LINDEN, TX
08017300	32	1959	1990	231	12010001	960436		77.70	-	COWLEECH FORK SABINE RIVER AT GREENVILLE, TX
08017500	02	1959	1990	231	12010001	325352	961511	78.70	-	SOUTH FORK SABINE RIVER NR QUINLAN, TX
08018500	7	1954	1960	379	12010001	324623	954756	888.00	-	SABINE RIVER NR EMORY, TEX. (DISC)
08018730	22	1938	1959	499	12010003	323649	952908	1357.00	-	SABINE RIVER NR MINEOLA, TX
08019000	10	1980	1989	223	12010003	325926	953718	353.10	-	BURKE CREEK NR YANTIS, TX
08019500	42	1925	1979	499	12010002	324547	952746	585.00	-	LAKE FORK CREEK NR QUITMAN, TX
08020000	24	1939	1962	459	12010002	323614	950529	231.00	-	BIG SANDY CREEK NR BIG SANDY, TX
08020200	31	1914	1960	183	12010002	322845	945736	2791.00	-	SABINE RIVER NR GLADEWATER, TX
08020500	9	1968	1976	183	12010002	322800	945714	48.90	-	PRAIRIE CREEK NEAR GLADEWATER, TEX. (DISC)
08020700	11	1905	1932	183	12010002	322317	944650	2947.00	-	SABINE RIVER NR LONGVIEW TEX. (DISC)
08020980	1	1964	1976	401	12010002	321818	945411	75.80	-	RABBIT CREEK AT KILGORE, TEX. (DISC)
08021000	9	1981	1948	183	12010002	322000	944341	47.90	-	MILL CREEK NEAR LONGVIEW, TX(DISC)
08022400	12	1940	1973	365	12010002	321354	940551	120.00	-	CHEROKEE BAYOU NR ELDERVILLE, TEX. (DISC)
08022500	57	1962	1980	31	12010002	315020	940022	82.60	-	SOCAGEE CREEK NR CARTHAGE, TEX. (DISC)
08023200	29	1904	1952	419	12010004	314556	940502	4842.00	4839.00	SABINE RIVER AT LOGANSPORT, LA
08024400	30	1952	1966	403	12010004	312801	934441	97.80	-	TENAHA CREEK NEAR SHELBYVILLE TX(DISC)
08024500	14	1924	1965	403	12070103	312310	935008	6508.00	-	SABINE RIVER NR MILAM, TEX. (DISC)
08025307	5	1952	1979	351	12010004	310350	934035	123.00	-	PALO GAUCHO BAYOU NR HEMPHILL, TEX. (DISC)
08026000	10	1975	1956	351	12010004	304449	933110	18.00	-	MILL CREEK NR BURKEVILLE, TX (DISC)
08028500	42	1956	1965	351	12010005	304908	930630	7482.00	-	SABINE RIVER NR BURKEVILLE, TX
08029500	39	1924	1990	351	12010005	302552	934707	8229.00	-	SABINE RIVER NR BON WEIR, TX
08030000	32	1952	1983	241	12010005	301813	935428	128.00	-	BIG COW CREEK NR NEWTON, TX
08030500	55	1908	1986	351	12010005	301100	934437	69.20	-	CYPRESS CREEK NR BUNA TX(DISC)
08031000	34	1953	1966	361	12010005	321834	935430	9929.00	-	SABINE RIVER NR RULIFF, TX
08031200	28	1962	1986	213	12020001	315332	953619	83.30	-	COW BAYOU NR MAURICEVILLE, TX (DISC)
08032000	23	1939	1989	73	12020001	313445	952550	232.00	-	KICKAPOO CREEK NEAR BROWNSBORO, TEX.
08032500	18	1944	1961	373	12020001	310759	950938	1145.00	-	NECHES RIVER NEAR NECHES, TEXAS
08033000	25	1924	1990	455	12020002	310825	944835	1945.00	-	NECHES RIVER NR ALTO, TEX(DISC)
08033300	28	1962	1989	457	12020002	310129	950511	2724.00	-	NECHES RIVER NEAR DIBOLL, TEX.
08033500	58	1904	1961	73	12020002	320010	942355	79.00	-	PINEY CREEK NEAR GROVETON, TEX.
08033700	9	1941	1949	401	12020004	315136	944923	3636.00	-	NECHES RIVER NEAR ROCKLAND, TEX.
08033900	26	1939	1989	73	12020004	315835	950938	146.00	-	STRIKER CREEK NR SUMMERFIELD, TEX. (DISC)
08034500	10	1939	1948	347	12020004	312726	944334	158.00	-	EAST FORK ANGELINA RIVER NEAR CUSHING, TEXAS
08037000	28	1924	1956	5	12020005	313658	943828	376.00	-	MUD CR NR JACKSONVILLE, TEX(DISC)
08037050	24	1965	1990	405	12020005	313015	941815	1600.00	-	ANGELINA RIVER NR LUFKIN, TEX(DISC)
08038000	48	1924	1986	241	12020005	311241	941740	31.30	-	BAYOU LANANA AT NACOGDOCHES, TX
08038500	14	1952	1965	199	12020005	312346	940903	503.00	-	ATTOYAC BAYOU NEAR CHIRENO, TEX.
08039100	30	1958	1990	199	12020005	310208	940748	2892.00	-	ANGELINA RIVER NR ZAVALLA, TEX. (DISC)
08039500	23	1928	1950	245	12020003	302120	940535	89.00	-	AYISH BAYOU NEAR SAN AUGUSTINE, TEXAS
08041000	32	1905	1950	241	12020003	302352	941548	3486.00	-	ANGELINA RIVER AT HORGER, TEX. (DISC)
08041500	55	1924	1990	199	12020007	300621	942004	7951.00	-	NECHES RIVER AT EVADALE, TEX.
08041700	23	1968	1990	199	12020007	295230	940994	860.00	-	VILLAGE CREEK NR KOUNTZE, TEX.
08042000	33	1952	1984	245	12040201	295544	940635	336.00	-	PINE ISLAND BAYOU NR SOUR LAKE, TEX.
08042500	31	1954	1985	245	12040201			262.00	-	TAYLOR BAYOU NR LABELLE, TX
08042700	10	1956	1973	237	12030101	331657	981753	128.00	-	HILLEBRANDT BAYOU NR LOVELL LAKE, TX
								21.60	-	NORTH CR NR JACKSBORO,TX(DISC)

Station	Yrs	Begin	End	Code	HUC	Lat	Long	Drainage	Pct	Description
08042800	19	1955	1973	237	12030101	331736	980443	683.00	-	WEST FORK TRINITY RIVER NR JACKSBORO, TX
08043500	25	1908	1932	497	12030101	331205	974521	1147.00	-	W FK TRINITY R AT BRIDGEPORT, TEX.(DISC)
08044000	19	1937	1955	497	12030101	331354	974140	333.00	-	BIG SANDY CREEK NR BRIDGEPORT, TX
08045500	10	1924	1933	439	12030102	324727	972454	2069.00	-	W F TRINITY R AT LK WORTH D AB FT WORTH,TX(DISC)
08047000	9	1948	1956	367	12030102	323828	972351	251.00	-	CLEAR FORK TRINITY RIVER NR ALEDO, TEX.(DISC)
08047500	5	1948	1952	439	12030102	323954	972630	431.00	-	CLEAR FORK TRINITY RIVER NR BENBROOK, TX
08048000	29	1924	1952	439	12030102	324356	972131	518.00	-	WEST FORK TRINITY RIVER AT FORT WORTH, TX
08048500	11	1921	1931	439	12030102	324539	971956	2615.00	-	WEST FORK TRINITY RIVER AT FORT WORTH, TX
08048970	8	1950	1957	439	12030102	324816	972148	16.80	-	MARINE CREEK AT FT WORTH, TX
08048980	1	1990	1990	439	12030102	323612	971553	84.50	-	VILLAGE CREEK AT FT WORTH, TEX.(DISC)
08049500	4	1987	1990	439	12030102	323828	971431	100.00	100.00	VILLAGE CREEK AT EVERMAN, TX
08049550	7	1925	1931	113	12030102	324546	965942	3065.00	-	WEST FORK TRINITY RIVER AT KENNEDALE, TX
08049580	13	1967	1979	439	12030102	325448	970744	29.60	-	WEST FORK TRINITY RIVER AT GRAND PRAIRIE, TX
08049600	5	1986	1990	113	12030102	329907	965924	25.50	-	BIG BEAR CREEK NEAR GRAND PRAIRIE, TX
08049700	4	1961	1964	113	12030102	323503	970123	119.00	-	MOUNTAIN CREEK NEAR GRAPEVINE,TEX.(DISC)
08050000	30	1961	1990	439	12030102	323451	970606	62.80	-	MOUNTAIN CREEK NEAR VENUS, TX
08050400	9	1925	1933	113	12030102	324220	965800	273.00	-	WALNUT CREEK NR CEDAR HILL, TX (DISC)
08050500	5	1986	1990	97	12030103	332727	970922	174.00	-	WALNUT CREEK NR MANSFIELD, TX
08050800	5	1949	1953	121	12030103	332311	970505	381.00	-	MOUNTAIN CR NR GRAND PRAIRIE, TEX.(DISC)
08051000	38	1986	1990	97	12030103	333316	965649	38.80	-	ELM FORK TRINITY RIVER AT GAINESVILLE, TX
08051130	5	1949	1986	121	12030103	332423	970045	266.00	-	ELM FORK TRINITY RIVER NR SANGER, TX (DISC)
08051500	15	1949	1961	121	12030103	332101	970249	692.00	-	TIMBER CREEK NR COLLINSVILLE, TX
08052700	9	1957	1963	121	12030103	332021	971051	295.00	-	ISLE DU BOIS CREEK NR PILOT POINT, TX (DISC)
08052780	2	1986	1965	121	12030103	331700	965333	75.50	-	ELM FORK TRINITY RIVER NEAR PILOT POINT, TX
08053500	14	1950	1987	121	12030103	330906	970830	129.00	-	CLEAR CREEK NR SANGER, TX
08054000	21	1950	1963	121	12030104	330708	971725	400.00	-	LITTLE ELM CREEK NR AUBREY, TX
08055000	5	1924	1955	121	12030104	330224	971217	621.00	-	HICKORY CREEK AT DENTON TX(DISC)
08055500	28	1924	1952	439	12030104	325913	970045	705.00	-	DENTON CREEK NR JUSTIN, TX
08057000	30	1904	1933	113	12030104	325757	971217	2459.00	-	DENTON CREEK NR ROANOKE, TEX.(DISC)
08059000	3	1950	1952	113	12030105	324629	964918	6106.00	-	DENTON CREEK NR GRAPEVINE, TX
08061500	30	1924	1953	85	12030106	331135	962832	113.00	-	ELM FORK TRINITY RIVER NR CARROLLTON, TX
08061540	22	1969	1990	397	12030106	325525	963020	840.00	-	TRINITY RIVER AT DALLAS, TX
08062500	15	1950	1953	113	12030106	325735	963651	120.00	-	SISTER GROVE CR NR PRINCETON, TEX.(DISC)
08062800	6	1939	1953	257	12030106	323819	962917	1256.00	-	E FK TRINITY R NR ROCKWALL, TEX.(DISC)
08062900	9	1964	1969	257	12030105	322535	962746	8146.00	-	ROWLETT CREEK NR SACHSE, TX
08063000	27	1963	1971	257	12030107	323018	960657	189.00	-	EAST FORK TRINITY RIVER NR CRANDALL, TX
08063100	2	1939	1965	257	12030107	323048	961944	233.00	-	TRINITY RIVER NR ROSSER, TX
08063200	5	1961	1962	349	12030107	321945	961005	733.00	-	CEDAR CREEK NEAR KEMP TX(DISC)
08063500	24	1957	1961	293	12030108	315618	964052	333.00	-	KINGS CREEK NEAR KAUFMAN TX(DISC)
08064500	22	1939	1962	349	12030108	314801	964302	17.60	-	CEDAR CR NR MABANK, TEX.(DISC)
08064600	4	1939	1960	349	12030109	315708	962516	734.00	-	RICHLAND CREEK NR DAWSON, TX
08064700	23	1973	1976	161	12030108	320629	962214	963.00	-	PIN OAK CR NR HUBBARD, TEX.(DISC)
08064800	28	1968	1990	161	12030108	315251	960550	1957.00	-	RICHLAND CREEK NR RICHLAND, TX
08065000	29	1962	1989	1	12030201	313854	961723	142.00	-	CHAMBERS CREEK NR CORSICANA, TX (DISC)
08065200	28	1924	1952	289	12030201	313411	955207	207.00	-	RICHLAND CREEK NR FAIRFIELD TX(DISC)
08065500	14	1962	1990	313	12030201	310428	954721	12833.00	-	TEHUACANA CREEK NR STREETMAN, TX
08065700	13	1940	1953	313	12030202	305612	955317	150.00	-	CATFISH CREEK NR TENNESSEE COLONY, TX
08065800	23	1964	1976	471	12030202	305303	954157	14450.00	-	TRINITY RIVER NR OAKWOOD, TX
08066000	51	1903	1953	471	12030202	305133	955607	112.00	-	UPPER KEECHI CREEK NR OAKWOOD, TX (DISC)
08066170	20	1966	1985	455	12030202	310306	954639	321.00	-	TRINITY RIVER NEAR MIDWAY, TEX. (DISC)
08066200	25	1966	1990	373	12030202	305425	952355	15589.00	-	CANEY CREEK NEAR MADISONVILLE, TEX.(DISC)
08066300	28	1963	1990	373	12030202	305133	952240	222.00	-	BEDIAS CREEK NR MADISONVILLE, TX
08066400	24	1966	1989	407	12030202	304258	950518	57.00	-	TRINITY RIVER AT RIVERSIDE, TX
08066500	30	1924	1953	291	12030202	302852	945731	141.00	-	WHITE ROCK CREEK NR TRINITY, TX (DISC)
08067000	14	1940	1953	291	12030202	302530	944646	152.00	-	KICKAPOO CREEK NR ONALASKA, TX
08067500	19	1972	1990	291	12030203	302327	945906	38.80	-	LONG KING CREEK AT LIVINGSTON, TX
08068000	37	1924	1972	339	12030203	302530	945102	17186.00	-	MENARD CREEK NR RYE, TX
08068450	2	1981	1982	201	12040101	300327	944905	17468.00	64.90	BIG CREEK NR SHEPHERD, TX
				291	12040101	301440	945910	64.90	-	TRINITY RIVER AT ROMAYOR, TX
				339	12040101	301440	952725	828.00	-	TRINITY RIVER AT LIBERTY, TX
				201	12040102	300802	952838	34.50	-	CEDAR BAYOU NR CROSBY, TX
										WEST FORK SAN JACINTO RIVER NR CONROE, TX
										PANTHER BRANCH NR SPRING, TX(DISC)

Site No.	N	Begin	End	Code	HUC	Lat	Long	Value 1	Value 2	Station Name
08068500	37	1939	1975	201	12040102	300637	952610	409.00	-	SPRING CREEK NEAR SPRING, TEX.(DISC)
08068520	53	1929	1990	201	12040102	300531	952421	419.00	-	SPRING CREEK AT SPRING, TX
08068720	15	1976	1990	201	12040102	295700	954829	110.00	-	CYPRESS CR AT KATY-HOCKLEY ROAD NR HOCKLEY, TX
08068740	16	1975	1990	201	12040102	295732	954903	131.00	-	CYPRESS CREEK AT HOUSE-HAHL ROAD NR CYPRESS, TX
08068780	8	1983	1990	201	12040102	300057	954150	41.00	-	LITTLE CYPRESS CREEK NR CYPRESS, TX
08068800	8	1983	1990	201	12040102	295824	953554	214.00	-	CYPRESS CREEK AT GRANT RD NR CYPRESS, TX
08068900	2	1988	1989	201	12040102	300023	953042	248.00	-	CYPRESS CR AT STUEBNER-AIRLINE RD NR WESTFIELD.
08069500	26	1929	1954	201	12040101	300137	951528	1741.00	-	WEST FORK SAN JACINTO RIVER NR HUMBLE, TX
08068600	51	1940	1990	291	12040103	302011	950614	325.00	-	EAST FORK SAN JACINTO RIVER NR CLEVELAND, TX
08070200	6	1985	1990	339	12040103	300843	950727	388.00	388.00	EAST FORK SAN JACINTO RIVER NR NEW CANEY, TX
08070500	46	1944	1990	339	12040103	301534	951808	105.00	-	CANEY CREEK NR SPLENDORA, TX
08071000	34	1944	1977	339	12040103	301357	951005	117.00	-	PEACH CREEK AT SPLENDORA, TEX.(DISC)
08071280	6	1985	1990	291	12040103	300634	950335	218.00	-	LUCE BAYOU ABOVE LAKE HOUSTON NR HUFFMAN, TX
08071500	17	1937	1953	201	12040101	295940	950800	2800.00	-	SAN JACINTO R NR HUFFMAN, TEX.(DISC)
08072300	10	1981	1990	157	12040104	294435	954824	63.30	-	BUFFALO BAYOU NR KATY, TX
08072730	10	1980	1990	201	12040104	294950	954112	21.50	21.50	BEAR CREEK NR BARKER, TX
08072760	3	1981	1990	201	12040104	295201	953847	24.60	24.60	LANGHAM CR AT WEST LITTLE YORK RD NR ADDICKS, TX
08076180	4	1987	1990	201	12040101	295603	951402	31.00	-	GARNERS BAYOU NR HUMBLE, TX
08077000	42	1946	1990	39	12040204	293550	951711	38.80	-	CLEAR CREEK NR PEARLAND, TX
08078000	44	1947	1990	39	12040204	292209	951914	87.70	-	CHOCOLATE BAYOU NR ALVIN, TX
08079000	29	1945	1973	39	12040205	290930	952832	171.00	-	OYSTER CREEK NEAR ANGLETON,TEX.(DISC)
08079500	12	1940	1951	303	12050003	333508	1014940	5300.00	200.00	NO.FO.DO.MO.FO.BRAZOS RIVER AT LUBBOCK,TEX(DISC)
08079575	7	1984	1990	169	12050003	331452	1012024	438.00	-	NORTH FORK DMF BRAZOS RIVER NR POST, TX
08079600	29	1962	1990	169	12050004	330218	1011150	1466.00	244.00	DMF BRAZOS RIVER AT JUSTICEBURG, TX
08080500	62	1925	1990	433	12050004	330029	1001049	8796.00	1864.00	DMF BRAZOS RIVER NR ASPERMONT, TX
08080540	13	1966	1978	169	12050007	332103	1011336	103.00	79.20	MCDONALD CREEK NEAR POST, TEX.(DISC)
08080700	37	1939	1990	189	12050005	341044	1014208	1291.00	382.00	RUNNING WATER DRAW AT PLAINVIEW,TEX(DISC)
08080950	2	1965	1966	263	12050007	332122	1004217	431.00	279.00	DUCK CREEK NR GIRARD, TX
08081000	5	1950	1951	433	12050007	331243	1002553	4619.00	1985.00	SALT FORK BRAZOS RIVER NR PEACOCK, TX (DISC)
08081200	27	1960	1986	433	12050007	331718	1002552	290.00	-	CROTON CREEK NR JAYTON, TX (DISC)
08081500	21	1957	1977	269	12050007	332403	1002429	64.30	-	SALT CROTON CREEK NR ASPERMONT,TEX.(DISC)
08082000	27	1924	1963	433	12050007	332002	1001416	5130.00	2496.00	SALT FK BRAZOS R NR ASPERMONT, TX
08082100	18	1966	1983	433	12050007	331400	1001247	88.80	-	STINKING CREEK NR ASPERMONT TX(DISC)
08082180	21	1966	1986	433	12060101	332259	1000451	251.00	-	NORTH CROTON CREEK NR KNOX CITY, TX (DISC)
08082500	50	1924	1973	447	12060101	-	992753	15538.00	5972.00	BRAZOS RIVER AT SEYMOUR, TX
08082700	27	1964	1990	447	12060101	331945	992753	104.00	-	MILLERS CREEK NR MUNDAY, TX
08083100	29	1962	1990	151	12060102	324715	994715	228.00	-	CLEAR FORK BRAZOS RIVER NR ROBY, TX
08083240	22	1968	1989	253	12060102	323553	994853	1416.00	-	CLEAR FORK BRAZOS RIVER AT HAWLEY, TX (DISC)
08083245	21	1969	1989	253	12060102	323404	994732	205.00	-	MULBERRY CR NR HAWLEY, TX (DISC)
08083300	1	1979	1979	441	12060102	322108	994827	133.00	-	ELM CREEK NEAR ABILENE, TEX (DISC)
08083400	16	1964	1979	441	12060102	322329	995108	39.10	-	LITTLE ELM CREEK NEAR ABILENE,TEX(DISC)
08083420	9	1971	1979	441	12060102	322831	994456	13.00	-	CAT CLAW CREEK AT ABILENE,TEX(DISC)
08083470	9	1971	1979	253	12060102	322656	994313	119.00	-	CEDAR CREEK AT ABILENE, TX (DISC)
08084000	16	1924	1939	253	12060103	324124	994009	2199.00	-	CLEAR FORK BRAZOS RIVER AT NUGENT, TX
08084800	28	1963	1990	417	12060103	325551	993832	478.00	-	CALIFORNIA CREEK NR STAMFORD, TX
08085500	16	1924	1939	417	12060104	325604	993327	3988.00	-	CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX
08086050	13	1963	1963	417	12060105	323133	991011	228.00	-	DEEP CREEK AT MORAN, TEX. (DISC)
08086100	14	1962	1975	417	12060105	324121	990952	454.00	-	HUBBARD CREEK NEAR ALBANY,TEX. (DISC)
08086150	28	1963	1990	417	12060105	324227	991629	39.30	-	NORTH FORK HUBBARD CREEK NR ALBANY, TX
08086212	24	1967	1990	417	12060105	324358	990825	613.00	-	HUBBARD CREEK BELOW ALBANY, TX
08086260	9	1967	1975	429	12060105	323501	990157	26.40	-	PECAN CREEK NEAR EOLIAN, TEX. (DISC)
08086500	8	1955	1962	429	12060105	325013	985652	1089.00	-	HUBBARD CREEK NR BRECKENRIDGE, TX (DISC)
08087300	19	1916	1939	503	12060201	325736	984559	5697.00	-	CLEAR FORK BRAZOS RIVER AT ELIASVILLE,TX(DISC)
08088000	23	1939	1961	503	12060201	330127	980837	22673.00	13107.00	BRAZOS RIVER NR SOUTH BEND, TX
08088100	20	1958	1977	503	12060201	332213	984440	11.80	-	SALT CREEK AT OLNEY, TEX.(DISC)
08088300	31	1959	1989	503	12060201	331243	983706	24.20	-	BRIAR CREEK NR GRAHAM, TX
08088450	25	1965	1989	429	12060201	324939	984325	97.00	-	BIG CEDAR CREEK NR IVAN, TX
08089000	17	1924	1940	363	12060201	325145	981808	23811.00	14245.00	BRAZOS RIVER NR PALO PINTO, TX
08090500	13	1951	1963	363	12060201	323751	981050	573.00	-	PALO PINTO CR NR SANTO, TEX.(DISC)
08091000	17	1924	1940	425	12060201	321618	973948	25818.00	16252.00	BRAZOS RIVER NR GLEN ROSE, TX
08091500	35	1948	1982	425	12060202	321353	974637	410.00	-	PALUXY RIVER AT GLEN ROSE, TX

Station	N	Begin	End	Map	HUC	Lat	Long	Drainage Area	Contrib. Area	Station Name
08091750	5	1974	1978	425	12060202	321612	974356	70.30	-	SQUAW CREEK NR GLEN ROSE. TX
08092000	16	1948	1963	217	12060202	320902	972409	282.00	-	NOLAN RIVER AT BLUM. TX
08093100	2	1939	1940	35	12060202	314844	971751	27244.00	17678.00	BRAZOS RIVER NR AQUILLA. TX
08093250	10	1981	1990	217	12060202	320020	970859	57.90	-	HACKBERRY CREEK AT HILLSBORO. TX
08093500	41	1939	1979	217	12060202	315040	971204	308.00	-	AQUILLA CREEK NR AQUILLA.TX
08093700	7	1959	1965	143	12060204	321256	981155	95.90	-	NORTH BOSQUE R AT STEPHENVILLE.TEX(DISC)
08095000	44	1924	1967	35	12060204	314709	973404	968.00	-	NORTH BOSQUE RIVER NR CLIFTON.TX
08095200	8	1960	1967	35	12060204	314010	972809	1146.00	-	NORTH BOSQUE RIVER AT VALLEY MILLS, TX
08095300	30	1960	1990	309	12060203	313033	972156	182.00	-	MIDDLE BOSQUE RIVER NR MCGREGOR. TX
08095400	20	1960	1979	309	12060203	313206	972122	78.20	-	HOG CREEK NR CRAWFORD. TX
08096500	42	1899	1940	309	12060202	312206	970422	29573.00	20007.00	BRAZOS RIVER AT WACO. TX
08097500	13	1939	1951	145	12070101	311718	965810	30211.00	20645.00	BRAZOS RIVER NR MARLIN, TEX.(DISC)
08098300	20	1963	1982	331	12070101	310135	965917	23.00	-	LITTLE POND CR NR BURLINGTON.TX(DISC)
08099100	19	1961	1979	93	12070201	320650	983619	264.00	-	SABANA RIVER NR DE LEON. TX
08099500	15	1939	1953	93	12070201	315728	982732	1261.00	-	LEON RIVER NR HASSE. TX
08100000	7	1925	1931	193	12060202	314719	980716	1891.00	-	LEON RIVER NR HAMILTON. TX
08100500	9	1951	1959	99	12070201	312558	974542	2342.00	-	LEON RIVER AT GATESVILLE. TX
08101000	40	1951	1990	99	12070201	311705	975305	455.00	-	COWHOUSE CREEK AT PIDCOKE. TX
08102500	31	1924	1954	27	12070201	310412	972628	3542.00	-	LEON RIVER NR BELTON. TX
08102600	27	1980	1980	27	12070201	310306	972725	112.00	-	NOLAN CREEK AT BELTON. TX
08103000	26	1964	1989	281	12060202	310154	980059	818.00	-	LAMPASAS RIVER NR KEMPNER. TX
08103800	28	1963	1990	53	12070203	305441	980212	33.30	-	SOUTH FORK ROCKY CREEK NR BRIGGS, TX
08103900	49	1925	1973	27	12070203	305726	974230	1240.00	-	LAMPASAS RIVER AT YOUNGSPORT.TX(DISC)
08104000	4	1963	1966	27	12070203	310006	972932	1321.00	-	LAMPASAS RIVER NR BELTON. TX
08104100	5	1924	1928	27	12070204	305759	972045	5228.00	-	LITTLE RIVER NR LITTLE RIVER. TX
08104500	11	1969	1979	491	12070205	303942	974240	248.00	-	NORTH FORK SAN GABRIEL RIVER NR GEORGETOWN, TX
08104700	23	1968	1990	491	12070205	303732	974127	133.00	-	SOUTH FORK SAN GABRIEL RIVER AT GEORGETOWN. TX
08104900	39	1935	1973	491	12070205	303914	973918	405.00	-	SAN GABRIEL RIVER AT GEORGETOWN, TX
08105000	23	1968	1990	491	12070205	304128	973921	83.10	83.10	BERRY CREEK NR GEORGETOWN. TX
08105100	19	1965	1976	331	12070205	303743	972823	599.00	-	SAN GABRIEL RIVER NR CIRCLEVILLE. TEX.(DISC)
08105700	15	1968	1979	331	12070205	304139	971643	738.00	-	SAN GABRIEL RIVER AT LANEPORT. TX
08106300	6	1981	1983	331	12070205	304138	970442	505.00	-	BRUSHY CREEK NEAR ROCKDALE,TX(DISC)
08106310	3	1918	1953	331	12070205	304953	970219	1359.00	-	SAN GABRIEL RIVER NR ROCKDALE. TX
08106500	36	1963	1973	41	12070204	305552	965701	7065.00	-	LITTLE RIVER AT CAMERON. TX
08108200	11	1900	1939	287	12070204	303652	970113	44.80	-	N ELM CR NR CAMERON, TEX.(DISC)
08109000	21	1963	1939	287	12070102	302021	962910	39515.00	29949.00	BRAZOS RIVER NR BRYAN, TX
08109700	28	1963	1990	51	12070101	301918	965416	236.00	-	MIDDLE YEGUA CREEK NR DIME BOX, TX
08109800	27	1963	1989	51	12070101	302426	964902	244.00	-	EAST YEGUA CREEK NR DIME BOX, TX
08110000	42	1925	1990	51	12070102	302510	963026	1009.00	-	YEGUA CREEK NR SOMERVILLE, TX
08110100	28	1963	1990	293	12070102	301918	963224	195.00	-	DAVIDSON CREEK NR LYONS. TX
08110430	11	1980	1990	395	12070103	303025	961931	57.10	-	BIG CREEK NR FREESTONE. TX
08110500	37	1925	1961	41	12070103	311012	961751	968.00	-	NAVASOTA RIVER NR EASTERLY, TX
08111000	11	1951	1961	477	12070103	305210	961132	1454.00	-	NAVASOTA RIVER NR BRYAN, TX
08111500	1	1939	1939	15	12070101	300744	961115	43880.00	34314.00	BRAZOS RIVER NR HEMPSTEAD, TX
08111700	27	1964	1990	157	12040204	295251	961218	376.00	-	MILL CREEK NR BELLVILLE. TX
08114000	21	1903	1939	157	12070104	293456	954527	45007.00	35441.00	BRAZOS RIVER AT RICHMOND. TX
08115000	43	1947	1990	157	12070104	292835	954845	42.80	-	BIG CREEK NR NEEDVILLE. TX
08115500	8	1959	1954	157	12070104	293042	954541	26.20	-	FAIRCHILD C NR NEEDVILLE. TEX.(DISC)
08116400	21	1980	1979	293	12090401	291848	954440	8.65	-	DRY CREEK NR ROSENBERG. TX
08117500	36	1955	1990	157	12090401	284826	955337	727.00	-	SAN BERNARD RIVER NR BOLING. TX
08117900	1	1972	1977	321	12090402	323740	955702	10.30	-	BIG BOGGY CREEK NEAR WADSWORTH. TEX.(DISC)
08117995	11	1990	1990	33	12080002	323600	1011706	498.00	26.30	COLORADO RIVER NR GAIL. TX
08118500	18	1948	1962	415	12080002	323529	1010538	26.30	-	BULL C NR IRA. TEX.(DISC)
08119000	4	1948	1965	415	12080002	323218	1010302	42.60	-	BLUFF C NR IRA. TEX.(DISC)
08119500	34	1948	1951	415	12080002	323425	1010312	3483.00	1112.00	COLORADO RIVER NR IRA. TX (DISC)
08120500	7	1953	1986	415	12080002	322333	1005427	198.00	188.00	DEEP CREEK NR DUNN. TX (DISC)
08121000	9	1924	1951	335	12080002	322342	1005242	3966.00	1585.00	COLORADO RIVER AT COLORADO CITY. TX
08121500	12	1955	1963	335	12080002	321901	1010132	273.00	230.00	MORGAN C NR WESTBROOK. TEX.(DISC)
08123500	21	1948	1959	335	12080002	321501	1004928	198.00	177.00	CHAMPION C NR COLORADO CITY(DIS)
08123650	21	1959	1979	227	12080007	321901	1012926	9319.00	1505.00	BEALS CREEK ABOVE BIG SPRINGS,TEX(DISC)
08123720	4	1984	1987	227	12080007	321456	1012142	9383.00	1569.00	BEALS CREEK NR COAHOMA. TX (DISC)

Station	Years	Begin	End	Code1	HUC	Lat	Long	Value1	Value2	Station Name
08123800	31	1959	1989	335	12080007	321157	1010049	9802.00	1988.00	BEALS CREEK NR WESTBROOK, TX
08123900	14	1957	1970	81	12080008	320110	1004408	14997.00	4737.00	COLORADO R NR SILVER, TEX. (DISC)
08124000	14	1924	1948	81	12080008	315307	1002849	15307.00	5047.00	COLORADO RIVER AT ROBERT LEE, TX
08124500	61	1908	1968	399	12090101	314358	995713	16413.00	6160.00	COLORADO RIVER AT BALLINGER, TX
08127000	57	1933	1989	399	12090101	311115	995651	450.00	-	ELM CREEK AT BALLINGER, TX
08128000	59	1931	1989	451	12090102	312538	1003006	413.00	354.00	SOUTH CONCHO RIVER AT CHRISTOVAL, TX
08128400	30	1961	1990	235	12090103	312538	1004239	2579.00	1611.00	MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX
08128500	31	1931	1961	451	12090103	312235	1003650	2653.00	1695.00	MIDDLE CONCHO RIVER NEAR TANKERSLEY,TEX(DISC)
08129300	30	1961	1990	451	12090102	311948	1003824	425.00	405.00	SPRING CREEK ABOVE TANKERSLEY, TX
08129500	30	1931	1960	451	12090102	311624	1003745	229.00	198.00	DOVE CREEK AT KNICKERBOCKER, TX
08131000	30	1931	1960	451	12090102	312130	1003205	699.10	671.00	SPRING C NR TANKERSLEY, TEX.(DISC)
08131400	25	1962	1986	451	12090102	311832	1002644	81.10	-	PECAN CREEK NR SAN ANGELO, TX (DISC)
08131500	50	1940	1990	431	12090104	314948	1005936	588.00	568.00	NORTH CONCHO RIVER AT STERLING CITY, TX
08134000	65	1925	1990	451	12090104	313533	1003812	1266.00	1191.00	NORTH CONCHO RIVER NR CARLSBAD, TX
08135000	17	1916	1951	451	12090104	312757	1002651	1525.00	1450.00	NORTH CONCHO RIVER AT SAN ANGELO, TX
08136500	36	1916	1951	451	12090105	312716	1002437	5542.00	4411.00	CONCHO RIVER AT SAN ANGELO, TX
08137500	36	1916	1951	95	12090105	313057	995509	6574.00	5443.00	CONCHO RIVER AT PAINT ROCK, TX
08137000	10	1951	1960	83	12090106	313524	991336	70.00	-	MUKEWATER C AT TRICKHAM, TEX.(DISC)
08138000	24	1924	1951	49	12090106	312804	990943	25179.00	13788.00	COLORADO RIVER AT WINCHELL, TEX.(DISC)
08140700	5	1969	1973	49	12090107	315821	990748	532.00	-	PECAN BAYOU NEAR CROSS CUT.TEX(DISC)
08142000	7	1941	1947	83	12090108	315050	992525	107.00	-	HORDS CREEK NR COLEMAN, TX
08143500	7	1924	1931	49	12090107	314354	985825	1660.00	-	PECAN BAYOU AT BROWNWOOD TX(DISC)
08144500	75	1916	1990	327	12090109	305508	994707	1135.00	1128.00	SAN SABA RIVER AT MENARD, TX
08144600	11	1980	1990	307	12090109	310014	991607	1633.00	1626.00	SAN SABA RIVER NR BRADY, TX
08145000	15	1940	1954	307	12090110	310817	992005	588.00	-	BRADY CREEK AT BRADY, TX (DISC)
08146000	64	1916	1979	411	12090109	311247	984309	3046.00	3039.00	SAN SABA RIVER AT SAN SABA, TX
08147000	35	1916	1951	411	12090201	311304	983351	31217.00	19819.00	COLORADO RIVER NR SAN SABA, TX
08148500	62	1916	1977	267	12090202	303106	994319	914.00	-	NORTH LLANO RIVER NEAR JUNCTION, TEX.(DISC)
08150000	75	1916	1990	267	12090204	302951	990632	1856.00	1851.00	LLANO RIVER NR JUNCTION, TX
08150700	23	1968	1990	319	12090204	303938	990632	3247.00	3242.00	LLANO RIVER NR MASON, TX
08150800	27	1964	1990	319	12090204	303836	990544	215.00	-	BEAVER CREEK NR MASON, TX
08151000	15	1925	1939	299	12090204	304300	985300	3747.00	-	LLANO R NR CASTELL, TEX.(DISC)
08151500	51	1940	1990	299	12090204	304504	984010	4197.00	4192.00	LLANO RIVER AT LLANO, TX
08152000	24	1967	1990	299	12090201	303330	982819	346.00	-	SANDY CREEK NR KINGSLAND, TX
08152900	11	1980	1990	171	12090206	301313	985210	369.00	-	PEDERNALES RIVER NR FREDERICKSBURG, TX
08153000	10	1925	1934	171	12090206	301500	984000	647.00	-	PEDERNALES R AT STONEWALL, TEX.(DISC)
08153500	50	1940	1989	31	12090206	301730	982357	901.00	-	PEDERNALES RIVER NR JOHNSON CITY, TX
08154000	15	1925	1939	453	12090206	302515	980450	1294.00	-	PEDERNALES R NR SPICEWOOD, TEX.(DISC)
08154700	12	1979	1990	453	12090205	302219	974704	22.30	-	BULL CREEK AT LOOP 360 NR AUSTIN, TX
08155200	5	1980	1990	453	12090205	301746	975531	89.70	-	BARTON CREEK AT SH 71 NR OAK HILL,TX(DISC)
08155240	2	1989	1990	453	12090205	301628	975039	107.00	-	BARTON CREEK AT LOST CREEK BLVD. NR AUSTIN, TX
08155260	3	1983	1984	453	12090205	301612	974943	109.00	-	BARTON CR NR CAMP CRAFT RD NR AUSTIN. TX (DISC)
08155300	11	1980	1990	453	12090205	301440	974807	116.00	-	BARTON CREEK AT LOOP 360, AUSTIN, TX
08158000	39	1899	1937	209	12090205	301440	974139	39009.00	27606.00	COLORADO RIVER AT AUSTIN, TX
08158700	11	1980	1990	209	12090205	300459	980029	124.00	124.00	ONION CREEK NR DRIFTWOOD, TX
08158800	4	1980	1983	209	12090205	300509	975052	166.00	166.00	ONION CREEK AT BUDA, TX
08158810	11	1980	1990	209	12090205	300919	975623	12.20	12.20	BEAR CREEK BELOW FM ROAD 1826 NR DRIFTWOOD. TX
08158825	3	1981	1983	209	12090205	300731	975143	21.00	21.00	LITTLE BEAR CR AT FM ROAD 1626 NR MANCHACA, TX
08158840	11	1980	1990	453	12090205	301232	975411	8.24	8.24	SLAUGHTER CREEK AT FM ROAD 1826 NR AUSTIN, TX
08158880	7	1977	1984	453	12090205	301050	974655	3.58	-	BOGGY CR (SOUTH) AT CIRCLE S RD. AUSTIN, TX (D)
08159150	17	1964	1980	453	12090301	302716	973602	4.61	-	WILBARGER CREEK NEAR PFLUGERVILLE,TX(DISC)
08159165	6	1980	1985	21	12090301	301818	971748	38.70	38.70	BIG SANDY CREEK NR MCDADE, TX
08159170	6	1980	1985	21	12090301	301554	971939	63.80	63.80	BIG SANDY CREEK NR ELGIN, TX
08159500	6	1931	1936	21	12090301	300043	970943	39880.00	27000.00	COLORADO RIVER AT SMITHVILLE, TEX. (DISC)
08160000	26	1940	1966	89	12090301	300232	970934	1.48	-	DRY C AT BUESCHER LK NR SMITHVILLE, TEX.(DISC)
08160700	2	1984	1985	89	12090301	294309	963416	41403.00	29910.00	COLORADO RIVER ABOVE COLUMBUS,TX
08160800	29	1962	1990	89	12090301	294756	963155	17.30	-	REDGATE CREEK NR COLUMBUS, TX
08161000	21	1916	1936	89	12090302	294222	963212	41460.00	30237.00	COLORADO RIVER AT COLUMBUS, TX
08162000	6	1919	1925	481	12090302	291832	960613	42003.00	30600.00	COLORADO RIVER AT WHARTON, TX
08162600	19	1971	1990	321	12100401	285540	961015	145.00	-	TRES PALACIOS RIVER NR MIDFIELD, TX
08163500	51	1940	1990	285	12100101	292635	965639	108.00	-	LAVACA RIVER AT HALLETTSVILLE, TX

Station	N	Begin	End	Seq	HUC	Lat	Long	Area		Name
08164000	52	1939	1990	239	12100101	285735	964110	817.00	—	LAVACA RIVER NR EDNA, TX
08164300	29	1962	1990	285	12100102	292800	964845	332.00	—	NAVIDAD RIVER NR HALLETTSVILLE, TX
08164350	8	1982	1989	285	12100102	291918	964232	437.00	—	NAVIDAD RIVER NR SPEAKS, TX
08164450	11	1980	1990	239	12100102	290934	963247	289.00	—	SANDY CREEK NR LOUISE, TX
08164500	42	1939	1980	239	12100102	290132	963308	826.00	—	NAVIDAD RIVER NR GANADO,TEX.(DISC)
08164503	11	1980	1990	239	12100102	290417	962801	178.00	—	WEST MUSTANG CREEK NR GANADO, TX
08164600	20	1971	1990	469	12100402	285328	964908	91.70	—	GARCITAS CREEK NR INEZ, TX
08164800	20	1932	1990	469	12100402	284330	964607	68.30	—	PLACEDO CREEK NR PLACEDO, TX
08165300	24	1966	1990	265	12100201	300336	992340	168.00	—	NORTH FORK GUADALUPE RIVER NR HUNT, TX
08165500	25	1932	1990	265	12100201	300408	991923	298.00	—	GUADALUPE RIVER AT HUNT, TX
08166000	47	1942	1990	265	12100201	300600	991658	114.00	—	JOHNSON CREEK NR INGRAM, TX
08166140	2	1983	1984	265	12100201	300410	991142	494.00	—	GUADALUPE RIVER AB BEAR CR AT KERRVILLE TX(DIS
08166200	5	1986	1990	259	12100201	300309	990954	510.00	—	GUADALUPE RIVER AT KERRVILLE, TX
08167000	62	1919	1990	91	12100201	295810	985333	839.00	—	GUADALUPE RIVER AT COMFORT, TX
08167600	68	1923	1990	91	12100201	295138	982258	1315.00	—	GUADALUPE RIVER NR SPRING BRANCH, TX
08167800	14	1960	1973	91	12100202	295132	981047	10.90	—	REBECCA CREEK NEAR SPRING BRANCH,TEX.(DISC)
08168500	3	1960	1962	91	12100202	294253	980635	1436.00	—	GUADALUPE RIVER AT SATTLER, TX
08169000	35	1928	1962	91	12100202	294221	980720	1518.00	—	GUADALUPE RIVER AB COMAL R AT NEW BRAUNFELS, TX
08169500	36	1928	1973	91	12100202	294152	980623	130.00	—	COMAL RIVER AT NEW BRAUNFELS, TX
08170000	13	1915	1927	91	12100202	294152	980519	1652.00	—	GUADALUPE RIVER AT NEW BRAUNFELS, TX
08171000	10	1980	1990	209	12100203	295206	975538	93.00	—	SAN MARCOS RIVER SPRING FLOW AT SAN MARCOS, TX
08171300	63	1925	1990	209	12100203	295939	975435	355.00	—	BLANCO RIVER AT WIMBERLEY, TX
08172000	33	1957	1989	209	12100203	295845	975415	412.00	—	BLANCO RIVER NR KYLE, TX
08172400	50	1940	1989	55	12100203	293954	973859	838.00	—	SAN MARCOS RIVER AT LULING, TX
08172500	5	1959	1963	55	12100203	295522	973502	112.00	—	PLUM CREEK AT LOCKHART, TX
08173000	34	1925	1929	55	12100203	294917	973612	184.00	—	PLUM CREEK NR LOCKHART, TEX.(DISC)
08173500	28	1916	1963	177	12100203	294158	973522	309.00	—	PLUM CREEK NR LULING, TX
08174600	20	1960	1979	123	12100202	293536	971859	1249.00	—	SAN MARCOS R AT OTTINE, TEX.(DISC)
08175000	34	1931	1989	123	12100202	292826	972657	460.00	—	PEACH CREEK BELOW DILWORTH,TEX.(DISC)
08176000	23	1903	1935	469	12100202	291254	971552	549.00	—	SANDIES CREEK NR WESTHOFF, TX
08176500	27	1935	1961	123	12100204	290305	970046	4923.00	—	GUADALUPE R BELOW CUERO, TEX.(DISC)
08176550	4	1987	1990	175	12100204	284734	972117	167.00	—	FIFTEENMILE CREEK NR WESER, TX
08176900	11	1980	1990	469	12100204	285351	971334	357.00	—	COLETO CREEK AT ARNOLD ROAD NEAR SCHROEDER, TX
08177000	31	1930	1979	175	12100204	285141	971110	369.00	—	COLETO CREEK NEAR SCHROEDER,TEX(DISC)
08177300	12	1979	1990	469	12100204	284953	971901	28.00	—	PERDIDO CREEK AT FARM ROAD 622 NEAR FANNIN, TX
08177500	18	1939	1980	29	12100204	284505	970818	514.00	—	COLETO CREEK NR VICTORIA, TX
08177820	4	1987	1990	29	12100301	284351	982801	34.80	—	SAN ANTONIO RIVER AT HILDEBRAND AVE,SAN ANTONIO.
08178500	14	1916	1929	19	12100301	292756	983038	2.64	—	SAN PEDRO C AT FURNISH ST, SAN ANTONIO TX (CSG)
08178565	1	1990	1990	19	12100301	292422	982657	125.00	—	SAN ANTONIO RIVER AT LOOP 410, SAN ANTONIO. TX
08178640	11	1976	1988	29	12100302	291918	982629	2.45	—	WEST ELM CREEK AT SAN ANTONIO, TX
08178880	7	1983	1990	29	12100302	293723	990413	427.00	—	MEDINA RIVER AT BANDERA, TX
08179100	42	1923	1982	29	12100302	294326	985833	474.00	—	RED BLUFF CREEK NR PIPE CREEK, TX
08180750	25	1957	1981	259	12100302	294051	985719	56.30	—	MEDIO CREEK AT PEARSALL ROAD AT SAN ANTONIO, TX
08181400	4	1969	1990	91	12100302	291940	983819	47.90	—	HELOTES CREEK AT HELOTES, TX
08181480	22	1985	1990	29	12100302	293442	984129	15.00	—	LEON CREEK AT I.H. 35 AT SAN ANTONIO, TX
08183900	6	1963	1990	255	12100304	291947	983502	219.00	—	CIBOLO CREEK NR BOERNE, TX
08184000	28	1946	1990	255	12100304	294626	984150	68.40	—	CIBOLO CR NR BULVERDE, TEX.(DISC)
08185000	20	1946	1990	391	12100304	294333	982537	198.00	—	CIBOLO CREEK AT SELMA, TX
08186000	45	1931	1990	25	12100304	293538	981839	274.00	—	CIBOLO CREEK NR FALLS CITY, TX
08186500	60	1962	1990	391	12100304	290050	975548	827.00	—	ECLETO CREEK NR RUNGE, TX
08189200	28	1971	1990	25	12100405	285512	974619	239.00	—	COPANO CREEK NR REFUGIO, TX
08189300	20	1962	1977	409	12100406	281812	970644	87.80	—	MEDIO CREEK NEAR BEEVILLE, TEX.(DISC)
08189500	16	1940	1990	463	12100406	282858	973923	204.00	—	MISSION RIVER AT REFUGIO, TX
08189700	51	1964	1990	271	12100407	281730	971644	690.00	—	ARANSAS RIVER NR SKIDMORE, TX
08189800	27	1971	1990	463	12100407	281656	973714	247.00	—	CHILTIPIN CREEK AT SINTON, TX
08190000	18	1923	1990	507	12100407	280248	973013	128.00	—	NUECES RIVER AT LAGUNA, TX
08190500	68	1940	1990		12110102	292542	995949	737.00	—	WEST NUECES RIVER NR BRACKETTVILLE, TX
08192000	45	1928	1990		12110103	290725	1001410	1861.00	—	NUECES RIVER BELOW UVALDE, TX
08192500	63	1915	1922		12110103	284700	995000	2150.00	—	NUECES R NR CINDNIA, TEX.(DISC)

Station	N	Begin	End	Col	HUC code	Lat	Long	Contrib	Drainage area		Name
08193000	51	1940	1990	127	12110103	283000	994054		4082.00	—	NUECES RIVER NR ASHERTON, TX
08194000	67	1924	1990	283	12110105	282534	991423		5171.00	—	NUECES RIVER AT COTULLA, TX
08194200	29	1962	1990	479	12110105	275753	985800		469.00	—	SAN CASIMIRO CREEK NR FREER, TX
08194500	49	1942	1990	311	12110105	281831	983325		8093.00	—	NUECES RIVER NR TILDEN, TX
08194600	13	1965	1977	297	12110105	282516	981703		8561.00	—	NUECES RIVER AT SIMMONS, TEX.(DISC)
08195000	65	1923	1990	463	12110106	292918	994216		389.00	—	FRIO RIVER AT CONCAN, TX
08196000	38	1953	1990	463	12110106	293016	994652		126.00	—	DRY FRIO RIVER NR REAGAN WELLS, TX
08197500	39	1952	1990	463	12110106	291444	994027		631.00	—	FRIO RIVER BELOW DRY FRIO RIVER NR UVALDE, TX
08198000	48	1943	1990	463	12110106	292935	992949		206.00	—	SABINAL RIVER NR SABINAL, TX
08198500	38	1953	1990	463	12110106	291847	992846		241.00	—	SABINAL RIVER AT SABINAL, TX
08200500	30	1953	1964	325	12110107	293410	991447		95.60	—	HONDO CREEK NR TARPLEY, TX
08200700	30	1953	1990	325	12110107	292705	991107		132.00	—	HONDO CR NR HONDO, TEX.(DISC)
08201500	30	1961	1990	325	12100302	292326	990904		149.00	—	HONDO CREEK AT KING WATERHOLE NR HONDO, TX
08202000	9	1953	1961	325	12110107	293423	992410		45.00	—	SECO CREEK AT MILLER RANCH NR UTOPIA, TX
08202500	12	1953	1964	325	12110107	293301	992422		53.20	—	SECO CR NR UTOPIA, TEX.(DISC)
08202700	30	1961	1990	325	12110107	292920	992316		87.40	—	SECO CR NR D'HANIS, TEX.(DISC)
08205500	75	1916	1990	163	12110107	292143	991705		168.00	—	SECO CREEK AT ROWE RANCH NR D'HANIS, TX
08206600	11	1980	1990	311	12110108	284411	990840		3429.00	—	FRIO RIVER NR DERBY, TX
08206700	27	1964	1990	311	12110109	282802	983250		4493.00	—	FRIO RIVER AT TILDEN, TX
08207000	52	1925	1981	311	12110108	283514	983244		783.00	—	SAN MIGUEL CREEK NR TILDEN, TX
08208000	59	1915	1990	297	12110110	282931	982047		5491.00	—	FRIO RIVER AT CALLIHAM,TEX(DISC)
08210000	71	1931	1986	297	12110110	283718	981702		1171.00	—	ATASCOSA RIVER AT WHITSETT, TX
08210400	18	1932	1989	409	12110111	280334	980548	5490.00	15427.00	—	NUECES RIVER NR THREE RIVERS, TX
08211000	2	1973	1932	355	12110111	280217	975136		155.00	—	LAGARTO CREEK NR GEORGE WEST, TX
08211520	18	1967	1973	47	12110202	274240	973006		90.30	—	OSO CREEK AT CORPUS CHRISTI, TX
08212400	17	1958	1983	141	12110205	271551	980808	476.00	480.00	—	LOS OLMOS CREEK NR FALFURRIAS, TX
08365600	20	1958	1977	141	13040100	314920	1062809		2.30	—	MCKELLIGON CANYON AT EL PASO, TEX.(DISC)
08365800	20	1972	1977	377	13040100	314702	1062641		6.40	—	GOVERNMENT DITCH AT EL PASO, TEX.(DISC)
08373200	6	1932	1983	377	13040201	293450	1042155		276.00	—	CIBOLO CREEK NEAR PRESIDIO, TEX.(DISC)
08374000	52	1969	1980	443	13040202	293115	1041740		1504.00	—	ALAMITO CREEK NR PRESIDIO, TX
08376300	12	1944	1957	389	13040208	300746	1022306		195.00	—	SANDERSON CANYON AT SANDERSON,TX(DISC)
08411500	14	1932	1944	389	13070001	315240	1035650		464.00	—	SALT SCREWBEAN DRAW NR ORLA, TEX.(DISC)
08424500	18	1949	1949	243	13070001	305204	1035809		53.80	—	MADERA CANYON NR TOYAHVALE, TEX.(DISC)
08431700	19	1966	1966	243	13070005	303648	1040004		52.40	—	LIMPIA CREEK ABOVE FT DAVIS, TX
08431800	19	1962	1985	243	13070005	304052	1034730		227.00	—	LIMPIA CREEK BELOW FORT DAVIS, TEX.(DISC)
08433000	16	1979	1977	389	13070005	305728	1032733		612.00	—	BARRILLA DRAW NR SARAGOSA TX(DISC)
08434000	5	1940	1983	389	13070003	312100	1032400		3709.00	—	TOYAH CR BL TOYAH LK NR PECOS, TEX.(DISC)
08435600	12	1971	1951	43	13070006	302130	1034248		27.90	—	TORONTO CREEK NEAR ALPINE, TEX.(DISC)
08435620	6	1971	1976	43	13070006	302106	1034000		18.10	—	ALAMITO CREEK AT ALPINE, TEX.(DISC)
08435700	6	1971	1976	43	13070006	302010	1033824		11.30	—	MOSS CREEK NEAR ALPINE, TEX.(DISC)
08435800	9	1969	1977	43	13070006	302252	1034408		29.70	—	SUNNY GLEN CANYON NEAR ALPINE, TEX.(DISC)
08447020	14	1964	1977	371	13070006	310227	1030815		1182.00	—	COYANOSA DRAW NEAR FORT STOCKTON, TEX.(DISC)
08449000	11	1974	1984	443	13070010	302707	1014358		763.00	—	INDEPENDENCE CREEK NR SHEFFIELD, TX
08449400	35	1925	1973	465	13040302	295748	1010842		2730.00	—	DEVILS R NR JUNO, TEX.(DISC)
08455000	16	1961	1976	465	13040302	294035	1010000		3961.00	—	DEVILS RIVER AT PAFFORD CROSSING NR COMSTOCK. TX
08459000	52	1932	1983	323	13080001	290845	1004305		249.00	—	PINTO CREEK NR DEL RIO, TX
08459000	66	1899	1968	479	13080002	272945	992925		132578.00	—	RIO GRANDE AT LAREDO, TX
08469200	1	1952	1952	215	13090002	260800	982005		176112.00	—	RIO GRANDE BELOW ANZALDUAS DAM, TX

APPENDIX   II
**(List of non-urban unregulated watersheds
that are used in developing flood
volume-duration-frequency relationships)**

"TXUNREG DV" --A FILE PRESENTING GAGES AND PERIOD OF RECORD AVAILABLE FOR FLOOD-VOLUME FREQUENCY ANALYSES

PERIOD OF RECORD AND SELECTED CHARACTERISTICS FOR USGS STREAMFLOW-GAGING STATIONS IN TEXAS WITH NON-URBAN WATER: UNREGULATED FLOOD DATA. DAILY-MEAN DISCHARGE VALUES EXIST FOR THE PERIOD OF RECORD SHOWN FOR EACH GAGE. FOR SOME G EXISTS AFTER THE END OF THE PERIOD OF RECORD SHOWN HERE--THAT DATA REPRESENTS FLOW AFFECTED BY REGULATION FROM RE

GAGE NUMBER OF DATA	YEARS NUMBER OF DATA	PERIOD OF RECORD BEGIN	END	COUN-TY LOGIC NO.	HYDRO-LOGIC UNIT NO.	LATI-TUDE DDMMSS	LONGI-TUDE DDDMMM	DRAINAGE AREA (SQ. MI.)	CONTRIB-UTING DRAIN. AREA (SQ. MI.)	NAME OF GAGING STATION
7227470	9	1969	1977	359	11090105	353108	1021535	18536	14713	CANADIAN RIVER AT TASCOSA, TEX.(DIS(
7227500	55	1924	1990	375	11090105	352813	1015245	19445	15376	CANADIAN RIVER NR AMARILLO, TX
7228000	26	1938	1963	211	11090106	355606	1002213	22866	18178	CANADIAN RIVER NR CANADIAN, TX
7233500	35	1945	1979	195	11100104	361208	1011820	960	440	PALO DURO CREEK NEAR SPEARMAN,TE
7235000	34	1938	1990	295	11100203	361419	1001631	697	475	WOLF CREEK AT LIPSCOMB, TX
7295500	21	1941	1973	117	11120101	345055	1021032	1968	538	TIERRA BLANCA CR AB BUF.LK NR UMBA(
7297500	15	1924	1949	381	11120103	350038	1015329	3369	711	PRAIRIE DOG TOWN F RED R NR CANYO(
7297910	23	1968	1990	11	11120103	345015	1012449	4211	930	PDTF RED RIVER NR WAYSIDE, TX
7298500	11	1939	1962	191	11120103	343740	1005625	6082	1581	PRAIRIE DOG TOWN FORK RED R NR BRI
7299200	17	1964	1980	191	11120105	343423	1004443	6792	2023	PDTF RED RIVER NR LAKEVIEW,TX(DISC)
7299500	12	1924	1947	191	11120105	343020	1002610	7293	4769	PDTF RED RIVER NEAR ESTELLINE,TEX(I
7299540	26	1965	1990	75	11120105	343409	1001137	7725	2958	PDTF RED RIVER NR CHILDRESS, TX
7299570	23	1960	1982	197	11130101	342447	994403	8321	3552	RED RIVER NR QUANAH, TX
7299670	22	1962	1983	197	11130101	342116	994424	303	303	GROESBECK CREEK AT S.H. 6 NR QUAN/
7300000	15	1953	1967	87	11120202	345727	1001314	1222	1013	SALT FORK RED RIVER NR WELLINGTON
7301300	27	1964	1990	483	11120302	351551	1001429	1082	703	NORTH FORK RED RIVER NR SHAMROC(
7307800	25	1960	1990	101	11130105	341339	1000424	2754	2195	PEASE RIVER NR CHILDRESS, TX
7308000	23	1924	1947	155	11130105	340545	994347	3037	2478	PEASE RIVER NEAR CROWELL TEX (DISC
7308200	30	1960	1989	487	11130105	341044	991640	3488	2929	PEASE RIVER NR VERNON, TX
7308500	31	1960	1990	485	11130102	340636	983153	2057	1463	RED RIVER NR BURKBURNETT, TX
7311600	21	1962	1982	101	11130204	335702	1000352	540	-	NORTH WICHITA RIVER NR PADUCAH,TX(
7311700	30	1961	1990	275	11130204	334914	994710	937	-	NORTH WICHITA RIVER NR TRUSCOTT, 1
7311790	9	1971	1979	269	11130205	333918	1000049	499	-	SOUTH WICHITA RIVER AT ROSS RANCH
7311800	30	1961	1990	275	11130205	333839	994802	584	-	SOUTH WICHITA RIVER NR BENJAMIN, T)
7311900	19	1961	1979	23	11130206	334201	992318	1874	-	WICHITA RIVER NEAR SEYMORE,TEX(DIS
7312200	19	1961	1979	485	11130207	335421	985417	652	-	BEAVER CREEK NR ELECTRA, TX

Station	No.	Yr1	Yr2	Code1	Code2	Lat	Long	Area	Name
7314500	15	1932	1946	9	11130206	333945	983646	481	LITTLE WICHITA RIVER NR ARCHER CITY.
7342500	48	1943	1990	119	11140301	332120	953539	527	SOUTH SULPHUR RIVER NR COOPER, TX
7343200	34	1957	1990	449	11140302	332310	950756	1365	SULPHUR RIVER NR TALCO, TX
7343500	41	1950	1990	449	11140303	331920	950533	494	WHITE OAK CREEK NR TALCO, TX
7344000	47	1910	1956	37	11140302	331500	943700	2774	SULPHUR RIVER NR DARDEN, TEX.(DISC)
7344500	27	1943	1969	63	11140305	330115	945255	366	BIG CYPRESS CREEK NR PITTSBURG, TX
7346000	45	1913	1957	315	11140306	324458	942955	850	BIG CYPRESS CREEK NR JEFFERSON, T.
7346045	22	1969	1990	315	11140306	324640	942126	365	BLACK CYPRESS BAYOU AT JEFFERSON
7346050	28	1963	1990	459	11140307	324021	944503	383	LITTLE CYPRESS CREEK NR ORE CITY, T
7346070	45	1946	1990	315	11140307	324250	942044	675	LITTLE CYPRESS CREEK NR JEFFERSON
8018500	22	1938	1959	499	12010001	323649	952908	1357	SABINE RIVER NR MINEOLA, TX
8019000	42	1925	1979	499	12010003	324547	952746	585	LAKE FORK CREEK NR QUITMAN, TX
8020000	31	1914	1960	183	12010002	323137	945736	2791	SABINE RIVER NR GLADEWATER, TX
8020500	11	1905	1932	183	12010002	322800	944650	2947	SABINE RIVER NR LONGVIEW TEX (DISC)
8022500	57	1904	1960	31	12010004	315820	940022	4842 4839	SABINE RIVER AT LOGANSPORT, LA
8024400	30	1924	1966	403	12070103	312801	934441	6508	SABINE RIVER NR MILAM, TEX.(DISC)
8026000	10	1956	1965	351	12010005	310350	933110	7482	SABINE RIVER NR BURKEVILLE, TX
8028500	42	1924	1965	351	12010005	304449	933630	8229	SABINE RIVER NR BON WEIR, TX
8030500	55	1908	1966	351	12010005	301813	934437	9329	SABINE RIVER NR RULIFF, TX
8032000	23	1939	1961	1	12020001	315332	952550	1145	NECHES RIVER NEAR NECHES, TEXAS
8032500	18	1944	1961	73	12020001	313445	950955	1945	NECHES RIVER NR ALTO,TEX.(DISC)
8033000	25	1924	1990	373	12020002	310758	944835	2724	NECHES RIVER NEAR DIBOLL, TEX.
8033500	58	1904	1961	457	12020003	310129	942355	3636	NECHES RIVER NEAR ROCKLAND, TEX
8037000	10	1939	1948	73	12020004	315835	950938	376	MUD CR NR JACKSONVILLE.TEX(DISC)
8038000	28	1924	1956	5	12020005	312726	944334	1600	ANGELINA RIVER NR LUFKIN,TEX(DISC)
8038500	48	1924	1986	347	12020005	313015	941815	503	ATTOYAC BAYOU NEAR CHIRENO, TEX.
8039500	14	1952	1965	5	12020005	311241	941740	2892	ANGELINA RIVER NR ZAVALA, TEX.(DISC
8041000	23	1928	1950	241	12020005	310208	940748	3486	ANGELINA RIVER AT HORGER, TEX.(DISC
8041500	32	1905	1950	241	12020003	302120	940535	7951	NECHES RIVER AT EVADALE, TEX.
8041700	55	1924	1990	199	12020006	302352	941548	860	VILLAGE CREEK NR KOUNTZE. TEX
8042800	23	1968	1990	199	12020007	300621	942004	336	PINE ISLAND BAYOU NR SOUR LAKE, TE>
8043500	19	1955	1973	237	12030101	331736	980443	683	WEST FORK TRINITY RIVER NR JACKSBC
8044000	25	1908	1932	497	12030101	331205	974521	1147	W FK TRINITY R AT BRIDGEPORT. TEX.(C
8045500	19	1937	1955	497	12030101	331354	974140	333	BIG SANDY CREEK NR BRIDGEPORT. TX
8047500	10	1924	1933	439	12030102	324727	972454	2069	W F TRINITY R AT LK WORTH D AB FT WC
8047500	29	1924	1952	439	12030102	324356	972131	518	CLEAR FORK TRINITY RIVER AT FORT W(
8048000	11	1921	1931	439	12030102	324539	971956	2615	WEST FORK TRINITY RIVER AT FORT WC

Station		yr1	yr2		Code				Description
8053500	14	1950	1963	121	12030104	330708	971725	400 -	DENTON CREEK NR JUSTIN, TX
8054000	21	1924	1955	121	12030104	330224	971217	621 -	DENTON CREEK NR ROANOKE, TEX.(DIS
8055500	28	1924	1951	113	12030103	325757	965639	2459 -	ELM FORK TRINITY RIVER NR CARROLLT
8057000	30	1904	1933	113	12030105	324629	964918	6106 -	TRINITY RIVER AT DALLAS, TX
8061500	30	1924	1953	397	12030106	325525	963020	840 -	E FK TRINITY R NR ROCKWALL, TEX.(DIS
8062500	15	1939	1953	257	12030105	322535	962746	8146 -	TRINITY RIVER NR ROSSER, TX
8063000	27	1939	1965	257	12030107	321945	961005	733 -	CEDAR CR NR MABANK, TEX.(DISC)
8063500	24	1939	1962	349	12030108	315702	962516	734 -	RICHLAND CREEK NR RICHLAND, TX
8064500	22	1939	1960	349	12030109	320629	962214	963 -	CHAMBERS CREEK NR CORSICANA, TX (I
8065000	29	1924	1952	1	12030201	313854	954721	12833 -	TRINITY RIVER NR OAKWOOD, TX
8065500	14	1940	1953	313	12030202	310428	954157	14450 -	TRINITY RIVER NEAR MIDWAY, TEX. (DIS
8065800	23	1968	1990	471	12030202	305303	954639	321 -	BEDIAS CREEK NR MADISONVILLE, TX
8066000	51	1903	1953	471	12030202	305133	952355	15589 -	TRINITY RIVER AT RIVERSIDE, TX
8066500	30	1924	1953	291	12030202	302530	945102	17186 -	TRINITY RIVER AT ROMAYOR, TX
8067000	14	1940	1953	291	12030203	300327	944905	17468 -	TRINITY RIVER AT LIBERTY, TX
8068000	37	1924	1972	339	12040101	301440	952725	828 -	WEST FORK SAN JACINTO RIVER NR COI
8068500	37	1939	1975	201	12040102	300637	952610	409 -	SPRING CREEK NEAR SPRING, TEX.(DISC
8068520	53	1929	1990	201	12040102	300531	952421	419 -	SPRING CREEK AT SPRING, TX
8069500	26	1929	1954	201	12040101	300137	951528	1741 -	WEST FORK SAN JACINTO RIVER NR HUI
8070000	51	1940	1990	291	12040103	302011	950614	325 -	EAST FORK SAN JACINTO RIVER NR CLE'
8071500	17	1937	1953	201	12040101	295940	950800	2800 -	SAN JACINTO R NR HUFFMAN, TEX.(DISC
8079500	12	1940	1951	303	12050003	333508	1014940	5300	200 NO.FO.DO.MO.FO.BRAZOS RIVER AT LUB
8079600	29	1962	1990	169	12050004	330218	1011150	1466	244 DMF BRAZOS RIVER AT JUSTICEBURG, T.
8080500	62	1925	1990	433	12050004	330029	1001049	8796	1864 DMF BRAZOS RIVER NR ASPERMONT, T>
8080700	37	1939	1978	189	12050005	341044	1014208	1291	382 RUNNING WATER DRAW AT PLAINVIEW.T
8082000	27	1924	1963	433	12050007	332002	1001416	5130	2496 SALT FK BRAZOS R NR ASPERMONT, TX
8082500	50	1924	1973	23	12060101	333451	991602	15538	5972 BRAZOS RIVER AT SEYMOUR, TX
8083240	22	1968	1989	253	12060102	323553	994853	1416 -	CLEAR FORK BRAZOS RIVER AT HAWLEY
8084000	16	1924	1939	253	12060102	324124	994009	2199 -	CLEAR FORK BRAZOS RIVER AT NUGENT
8084800	28	1963	1990	253	12060103	325551	993832	478 -	CALIFORNIA CREEK NR STAMFORD, TX
8085500	16	1924	1939	417	12060104	325604	991327	3988 -	CLEAR FORK BRAZOS RIVER AT FORT GI
8086100	14	1962	1975	417	12060105	324121	990952	454 -	HUBBARD CREEK NEAR ALBANY, TEX. (D
8086212	24	1967	1990	417	12060105	324358	990825	613 -	HUBBARD CREEK BELOW ALBANY, TX
8086500	8	1955	1962	429	12060105	325013	985652	1089 -	HUBBARD CREEK NR BRECKENRIDGE, T:
8087300	19	1916	1939	503	12060104	325736	984559	5697 -	CLEAR FORK BRAZOS RIVER AT ELIASVIL
8088000	23	1939	1961	503	12060201	330127	983837	22673	13107 BRAZOS RIVER NR SOUTH BEND, TX
8089000	17	1924	1940	363	12060201	325145	981808	23811	14245 BRAZOS RIVER NR PALO PINTO, TX

Station	n	Yr1	Yr2	X	HUC	G	H	I	Ref	Description
8090500	13	1951	1963	363	12060201	323751	981050	573		PALO PINTO CR NR SANTO, TEX.(DISC)
8091000	17	1924	1940	425	12060201	321618	973948	25818	16252	BRAZOS RIVER NR GLEN ROSE, TX
8091500	35	1948	1982	425	12060202	321353	974637	410		PALUXY RIVER AT GLEN ROSE, TX
8093500	41	1939	1979	217	12060202	315040	971204	308		AQUILLA CREEK NR AQUILLA, TX
8095000	44	1924	1967	35	12060204	314709	973404	968		NORTH BOSQUE RIVER NR CLIFTON, TX
8095200	8	1960	1967	35	12060204	314010	972809	1146		NORTH BOSQUE RIVER AT VALLEY MILLS
8096500	42	1899	1940	309	12060202	313206	970422	29573	20007	BRAZOS RIVER AT WACO, TX
8097500	13	1939	1951	145	12070101	311718	965810	30211	20645	BRAZOS RIVER NR MARLIN, TEX.(DISC)
8099500	15	1939	1953	93	12070201	315728	982732	1261		LEON RIVER NR HASSE, TX
8100500	9	1951	1959	99	12070201	312558	974542	2342		LEON RIVER AT GATESVILLE, TX
8101000	40	1951	1990	99	12070202	311705	975305	455		COWHOUSE CREEK AT PIDCOKE, TX
8102500	31	1924	1954	27	12070201	310412	972628	3542		LEON RIVER NR BELTON, TX
8103800	26	1964	1989	281	12060204	310454	980059	818		LAMPASAS RIVER NR KEMPNER, TX
8104000	49	1925	1973	27	12070203	305726	974230	1240		LAMPASAS RIVER AT YOUNGSPORT,TX((
8105000	39	1935	1976	491	12070202	303914	973918	405		SAN GABRIEL RIVER AT GEORGETOWN,
8105400	19	1925	1979	491	12070205	303743	972823	599		SAN GABRIEL RIVER NR CIRCLEVILLE, TE
8105700	15	1965	1953	491	12070204	304139	971643	738		SAN GABRIEL RIVER AT LANEPORT, TX
8106500	36	1918	1939	331	12070204	304953	965701	7065		LITTLE RIVER AT CAMERON, TX
8109000	21	1900	1966	41	12070101	303652	962910	39515	29949	BRAZOS RIVER NR BRYAN, TX
8110500	42	1925	1961	51	12070102	301918	963026	1009		YEGUA CREEK NR SOMERVILLE, TX
8111000	37	1925	1961	395	12070103	311012	961751	968		NAVASOTA RIVER NR EASTERLY, TX
8111700	11	1951	1990	41	12070103	305210	961132	1454		NAVASOTA RIVER NR BRYAN, TX
8114000	27	1964	1939	15	12070104	295251	961218	376		MILL CREEK NR BELLVILLE, TX
8117500	21	1903	1990	157	12040204	293456	954527	45007	35441	BRAZOS RIVER AT RICHMOND, TX
8123650	36	1955	1979	157	12090401	291848	955337	727		SAN BERNARD RIVER NR BOLING, TX
8123800	21	1959	1989	227	12080007	321501	1012926	9319	1505	BEALS CREEK ABOVE BIG SPRINGS,TEX(
8123900	31	1959	1970	335	12080007	321157	1010049	9802	1988	BEALS CREEK NR WESTBROOK, TX
8124000	14	1957	1948	81	12080008	320110	1004408	14997	4737	COLORADO R NR SILVER, TEX.(DISC)
8126500	14	1924	1968	81	12080008	315307	1002849	15307	5047	COLORADO RIVER AT ROBERT LEE, TX
8127000	61	1908	1989	399	12090101	314358	995713	16413	6160	COLORADO RIVER AT BALLINGER, TX
8128000	57	1933	1989	399	12090101	314457	995651	450		ELM CREEK AT BALLINGER, TX
8128400	59	1931	1990	451	12090102	311115	1003006	413	354	SOUTH CONCHO RIVER AT CHRISTOVAL
8128500	30	1931	1961	235	12090103	312538	1004239	2579	1611	MIDDLE CONCHO RIVER ABOVE TANKER
8129300	31	1961	1990	451	12090103	312235	1003650	2653	1685	MIDDLE CONCHO RIVER NEAR TANKERS
8131000	30	1931	1960	451	12090102	311948	1003824	425	405	SPRING CREEK ABOVE TANKERSLEY, T
	30			451	12090102	312130	1003205	699.1	671	SPRING C NR TANKERSLEY, TEX.(DISC)
8133500	50	1940	1990	431	12090104	314948	1005936	588	568	NORTH CONCHO RIVER AT STERLING CI

Station	Count	End	Start		HUC				Station Name
8134000	65	1990	1925	451	12090104	313533	1003812	1266	1191 NORTH CONCHO RIVER NR CARLSBAD, T
8135000	17	1951	1916	451	12090104	312757	1002651	1525	1450 NORTH CONCHO RIVER AT SAN ANGELO
8136000	36	1951	1916	451	12090105	312716	1002437	5542	4411 CONCHO RIVER AT SAN ANGELO, TX
8136500	36	1951	1916	95	12090105	313057	995509	6574	5443 CONCHO RIVER AT PAINT ROCK, TX
8138000	24	1951	1924	49	12090106	312804	990943	25179	13788 COLORADO RIVER AT WINCHELL, TX
8144500	75	1990	1916	327	12090109	305508	994707	1135	1128 SAN SABA RIVER AT MENARD, TX
8144600	11	1990	1980	307	12090109	310014	991607	1633	1626 SAN SABA RIVER NR BRADY, TX
8145000	15	1954	1940	307	12090110	310817	992005	588	BRADY CREEK AT BRADY, TX (DISC)
8146000	64	1979	1916	411	12090109	311247	984309	3046	3039 SAN SABA RIVER AT SAN SABA, TX
8147000	35	1951	1916	411	12090201	311304	983351	31217	19819 COLORADO RIVER NR SAN SABA, TX
8148500	62	1977	1916	267	12090202	303106	994839	914	NORTH LLANO RIVER NEAR JUNCTION, T
8150000	75	1990	1916	267	12090204	302951	994319	1856	1851 LLANO RIVER NR JUNCTION, TX
8150700	23	1990	1968	319	12090204	303938	990632	3247	3242 LLANO RIVER NR MASON, TX
8151000	15	1939	1925	299	12090204	304300	985300	3747	LLANO R NR CASTELL, TEX (DISC)
8151500	51	1990	1940	299	12090204	304504	984010	4197	4192 LLANO RIVER AT LLANO, TX
8152000	24	1990	1967	299	12090201	303330	982819	346	SANDY CREEK NR KINGSLAND, TX
8152900	11	1990	1980	171	12090206	301313	985210	369	PEDERNALES RIVER NR FREDERICKSBUI
8153000	10	1934	1925	171	12090206	301500	984000	647	PEDERNALES R AT STONEWALL, TEX.(DI
8153500	50	1989	1940	31	12090206	301730	982357	901	PEDERNALES RIVER NR JOHNSON CITY,
8154000	15	1939	1925	453	12090206	302515	980450	1294	PEDERNALES R NR SPICEWOOD, TEX.(DI
8158000	39	1937	1899	453	12090205	301440	974139	39009	27606 COLORADO RIVER AT AUSTIN, TX
8161000	21	1936	1916	89	12090302	294222	963212	41460	30237 COLORADO RIVER AT COLUMBUS, TX
8164000	52	1990	1939	239	12100101	285735	964110	817	LAVACA RIVER NR EDNA, TX
8164300	29	1990	1962	285	12100102	292800	964845	332	NAVIDAD RIVER NR HALLETTSVILLE, TX
8164350	8	1989	1982	285	12100102	291918	964232	437	437 NAVIDAD RIVER NR SPEAKS, TX
8164500	42	1980	1939	239	12100102	290132	963308	826	NAVIDAD RIVER NR GANADO,TEX(DISC)
8167000	62	1990	1919	259	12100201	295810	985333	839	GUADALUPE RIVER AT COMFORT, TX
8167500	68	1990	1923	91	12100201	295138	982258	1315	GUADALUPE RIVER NR SPRING BRANCH,
8188500	35	1962	1928	91	12100202	294253	980635	1518	GUADALUPE RIVER AB COMAL R AT NEW
8169500	13	1927	1915	91	12100202	294152	980623	1652	GUADALUPE RIVER AT NEW BRAUNFELS,
8171000	63	1990	1925	209	12100202	295939	980519	355	BLANCO RIVER AT WIMBERLEY, TX
8171300	33	1989	1957	209	12100203	295845	975435	412	BLANCO RIVER NR KYLE, TX
8172000	50	1989	1940	55	12100203	293954	973859	838	SAN MARCOS RIVER AT LULING, TX
8173000	34	1963	1930	55	12100203	294158	973612	309	PLUM CREEK NR LULING, TX
8173500	28	1943	1916	177	12100203	293536	973522	1249	SAN MARCOS R AT OTTINE, TEX.(DISC)
8174600	20	1979	1960	177	12100202	292026	971859	460	PEACH CREEK BELOW DILWORTH,TEX.(C
8175000	34	1989	1931	123	12100202	291254	972657	549	SANDIES CREEK NR WESTHOFF, TX

Station	No	Year1	Year2	No2	HUC	Lat	Long	DA	Extra	Station Name
8176000	23	1903	1935	123	12100204	290305	971552	4923		GUADALUPE R BELOW CUERO, TEX.(DIS(
8176500	27	1935	1961	469	12100204	284734	970046	5198		GUADALUPE RIVER AT VICTORIA, TX
8176900	11	1980	1990	175	12100204	285141	971334	357		COLETO CREEK AT ARNOLD ROAD NEAF
8177000	31	1930	1979	469	12100204	284953	971110	369		COLETO CREEK NEAR SCHROEDER, TEX
8177500	18	1939	1980	469	12100204	284351	970818	514		COLETO CREEK NR VICTORIA, TX
8179000	42	1923	1982	19	12100302	294031	985833	474		MEDINA RIVER NR PIPE CREEK, TX
8186000	60	1931	1990	255	12100304	290050	975548	827		CIBOLO CREEK NR FALLS CITY, TX
8189500	51	1940	1990	391	12100406	281730	971644	690		MISSION RIVER AT REFUGIO, TX
8190000	68	1923	1990	463	12110101	292542	995949	737		NUECES RIVER AT LAGUNA, TX
8190500	45	1940	1990	271	12110102	292821	1001410	694		WEST NUECES RIVER NR BRACKETTVILL
8192000	63	1928	1990	463	12110103	290725	995340	1861		NUECES RIVER BELOW UVALDE, TX
8193000	51	1940	1990	127	12110103	283000	994054	4082		NUECES RIVER NR ASHERTON, TX
8194000	67	1924	1990	283	12110105	282534	991423	5171		NUECES RIVER AT COTULLA, TX
8194200	29	1962	1990	479	12110105	275753	985800	469		SAN CASIMIRO CREEK NR FREER, TX
8194500	49	1942	1990	311	12110105	281831	983325	8093		NUECES RIVER NR TILDEN, TX
8194600	13	1965	1977	297	12110105	282516	981703	8561		NUECES RIVER AT SIMMONS, TEX.(DISC)
8195000	65	1923	1990	463	12110106	292918	994216	389		FRIO RIVER AT CONCAN, TX
8197500	39	1952	1990	463	12110106	291444	994027	631		FRIO RIVER BELOW DRY FRIO RIVER NR I
8205500	75	1916	1990	163	12110106	284411	990840	3429		FRIO RIVER NR DERBY, TX
8206600	11	1980	1990	311	12110108	282802	983250	4493		FRIO RIVER AT TILDEN, TX
8206700	27	1964	1990	311	12110109	283514	983244	783		SAN MIGUEL CREEK NR TILDEN, TX
8207000	52	1925	1981	311	12110108	282931	982047	5491		FRIO RIVER AT CALLIHAM,TEX(DISC)
8208000	59	1925	1990	297	12110110	283718	981702	1171		ATASCOSA RIVER AT WHITSETT, TX
8210000	71	1915	1986	297	12110111	282538	981040	15427	5490	NUECES RIVER NR THREE RIVERS, TX
8212400	17	1967	1983	47	12110205	271551	980808	480	476	LOS OLMOS CREEK NR FALFURRIAS, TX
8374000	52	1932	1983	377	13040202	293115	1041740	1504		ALAMITO CREEK NR PRESIDIO, TX
8411500	14	1944	1957	389	13070001	315240	1035650	464		SALT SCREWBEAN DRAW NR ORLA, TEX
8434000	12	1940	1951	389	13070003	312100	1032400	3709		TOYAH CR BL TOYAH LK NR PECOS, TEX
8435800	14	1964	1977	371	13070006	310227	1030815	1182		COYANOSA DRAW NEAR FORT STOCKT(
8447020	11	1974	1984	443	13070010	302707	1014358	763		INDEPENDENCE CREEK NR SHEFFIELD.
8449000	35	1925	1973	465	13040302	295748	1010842	2730		DEVILS R NR JUNO, TEX.(DISC)
8449400	16	1961	1976	465	13040302	294035	1010000	3961		DEVILS RIVER AT PAFFORD CROSSING N
8459000	66	1899	1968	479	13080002	272945	992925	132578		RIO GRANDE AT LAREDO, TX

APPENDIX   III
(Source code for computer program)

```
C ......................................................................
C .                                                                    .
C .         V        V  OOOO   L      FFFFF  OOOO   RRRR                .
C .          V      V  O    O  L      F     O    O  R   R               .
C .           V    V   O    O  L      FFFF  O    O  RRRR                .
C .            V  V     O    O  L      F     O    O  R   R              .
C .             V      OOOO   LLLLL  F      OOOO   R    R               .
C .                                                                    .
C .                        (VERSION 1.0)                               .
C .                                                                    .
C .     PROGRAM TO ESTIMATE FLOW VOLUMES FROM DAILY MEANS              .
C .             DEVELOPED BY RAVI S DEVULAPALLI                        .
C .                   UNDER GUIDANCE FROM                              .
C .                   DR. JUAN B VALDES                                .
C .                 AT TEXAS A&M UNIVERSITY                            .
C .              LAST UPDATED FEBRUARY 05, 1994                        .
C .                        14:00:28                                    .
C ......................................................................


C ......................................................................
C .     THIS PROGRAM EXTRACTS THE DAILY MEAN FLOW VALUES               .
C .     FROM THE USGS DAILY FLOW RECORDS                               .
C ......................................................................


C ......................................................................
C .     THE PROGRAM ALSO CONVERTS FLOWS TO VOLUMES AND SORTS           .
C .     THE TIME SERIES IN ORDER TO EVALUATE THE GUMBEL               .
C .     PLOTTING POSITIONS.                                            .
C ......................................................................

      PARAMETER J=31,KD=31
      DIMENSION IMAX(14),TEMPARR(366),REC_INT(150),MNTH(14)
      DIMENSION FAVE(10),FVAR(10),FSKEW(10),FCURT(10),FSDEV(10)
      DIMENSION AVEV(10),SDEVV(10),VARV(10),SKEWV(10),CURTV(10)
      DIMENSION IDAY(J),OCT(J,KD),ANOV(J,KD),DEC(J,KD),AJAN(J,KD),
     * FEB(J,KD),AMAR(J,KD),SUM(100,100)
      DIMENSION APR(J,KD),AMAY(J,KD),AJUN(J,KD),AJUL(J,KD),AUG(J,KD),
     * SEP(J,KD),YEAR(J,KD)

      COMMON NUM_DYS(10),MIN_NUM_DAYS,MAX_NUM_DAYS,FIRST_YEAR

      REAL MAX_FLOW(10,125),UNSORT_FLOW(10,125)
      REAL SORT_VOL(10,125),UNSORT_VOL(10,125)
      REAL MEAN(13),MAX(13),MIN(13),ACFT(13),FLOW(31,14)
      REAL LAVE(10),LSDEV(10),LVAR(10),LSKEW(10),LCURT(10)
      REAL LAVEV(10),LSDEVV(10),LVARV(10),LSKEWV(10),LCURTV(10)
      REAL LOG_SORT_VOL(10,125),LOG_UNSORT_VOL(10,125)
      INTEGER YR, TOTAL_YEARS, RANK, GAGENUM,TOT_YEAR,ANS2

      CHARACTER OUTFILE *15,INFILE *15
      CHARACTER INFO1,INFO2,INFO3
      CHARACTER TITLE(10) *132
      CHARACTER*5 AVG,HI,LO,AFT,ANS1

      PARAMETER(MZ=10,LZ=31,NZ=200)
      DIMENSION T(MZ),PROB(MZ),FK(MZ),QF(MZ)
      DIMENSION RCS(LZ),RYK(LZ,MZ),CS(LZ),YK(LZ,MZ),X1T(LZ),X2T(NZ)
      REAL FINAL_VOL(10,MZ)
      INTEGER A
      DATA T /1.05,1.11,1.25,2.,5.,10.,25.,50.,100.,200./
      DATA PROB /95.,90.,80.,50.,20.,10.,4.,2.,1.,0.5/
      DATA RCS /3.0,2.8,2.6,2.4,2.2,2.0,1.8,1.6,1.4,1.2,1.0,0.8,0.6,
     * 0.4,0.2,0.0,-0.2,-0.4,-0.6,-0.8,-1.0,-1.2,-1.4,-1.6,-1.8,-2.0,
     * -2.2,-2.4,-2.6,-2.8,-3.0/
      DATA ((RYK(A,K),K=1,MZ),A=1,19)/
     * -0.665,-0.660,-0.636,-0.396,0.420,1.180,2.278,3.152,4.051,4.970,
     * -0.711,-0.702,-0.666,-0.384,0.460,1.210,2.275,3.114,3.973,4.847,
     * -0.762,-0.747,-0.696,-0.368,0.499,1.238,2.267,3.071,3.889,4.718,
     * -0.819,-0.795,-0.725,-0.351,0.537,1.262,2.256,3.023,3.800,4.584,
     * -0.882,-0.844,-0.752,-0.330,0.574,1.284,2.240,2.970,3.075,4.444,
     * -0.949,-0.895,-0.777,-0.307,0.609,1.302,2.219,2.912,3.605,4.398,
     * -1.020,-0.945,-0.799,-0.282,0.643,1.318,2.193,2.848,3.499,4.147,
     * -1.093,-0.994,-0.817,-0.254,0.675,1.329,2.163,2.780,3.388,3.990,
     * -1.168,-1.041,-0.832,-0.225,0.705,1.337,2.128,2.706,3.271,3.828,
     * -1.243,-1.086,-0.844,-0.195,0.732,1.340,2.087,2.626,3.149,3.661,
     * -1.317,-1.128,-0.852,-0.164,0.758,1.340,2.043,2.542,3.022,3.489,
     * -1.388,-1.166,-0.856,-0.132,0.780,1.336,1.993,2.453,2.891,3.312,
     * -1.458,-1.200,-0.857,-0.099,0.800,1.328,1.939,2.359,2.755,3.132,
     * -1.524,-1.231,-0.855,-0.066,0.816,1.317,1.880,2.261,2.615,2.949,
     * -1.586,-1.258,-0.850,-0.033,0.830,1.301,1.818,2.159,2.472,2.763,
```

```
        *  -1.645,-1.282,-0.842, 0.000,0.842,1.282,1.751,2.054,2.326,2.576,
        *  -1.700,-1.301,-0.830, 0.033,0.850,1.258,1.680,1.945,2.178,2.388,
        *  -1.750,-1.317,-0.816, 0.066,0.855,1.231,1.606,1.834,2.029,2.201,
        *  -1.797,-1.328,-0.800, 0.099,0.857,1.200,1.528,1.720,1.880,2.016/
           DATA ((RYK(A,K),K=1,MZ),A=20,LZ)/
        *  -1.839,-1.336,-0.780, 0.132,0.856,1.166,1.448,1.606,1.733,1.837,
        *  -1.877,-1.340,-0.758, 0.164,0.852,1.128,1.366,1.492,1.588,1.664,
        *  -1.910,-1.340,-0.732, 0.195,0.844,1.086,1.282,1.379,1.449,1.501,
        *  -1.938,-1.337,-0.705, 0.225,0.832,1.041,1.198,1.270,1.318,1.351,
        *  -1.962,-1.329,-0.675, 0.254,0.817,0.994,1.116,1.166,1.197,1.216,
        *  -1.981,-1.318,-0.643, 0.282,0.799,0.945,1.035,1.169,1.087,1.097,
        *  -1.996,-1.302,-0.609, 0.307,0.777,0.895,0.959,0.980,0.990,0.995,
        *  -2.006,-1.284,-0.574, 0.330,0.752,0.844,0.888,0.900,0.905,0.907,
        *  -2.011,-1.262,-0.537, 0.351,0.725,0.795,0.823,0.830,0.832,0.833,
        *  -2.013,-1.238,-0.499, 0.368,0.696,0.747,0.764,0.768,0.769,0.769,
        *  -2.010,-1.210,-0.460, 0.384,0.666,0.702,0.712,0.714,0.714,0.714,
        *  -2.003,-1.180,-0.420, 0.393,0.636,0.660,0.666,0.667,0.667,0.667/

           WRITE(*,99)
    99     FORMAT(///5X, 'INPUT FILE NAME PLEASE......    ',$)
           READ(*,'(A15)') INFILE
           WRITE(*,199)
   199     FORMAT(///5X, 'OUTPUT FILE NAME PLEASE......    ',$)
           READ(*,'(A15)') OUTFILE
           WRITE(*,89)
    89     FORMAT(///5X, 'THE GAGE NUMBER PLEASE......    ',$)
           READ(*,'(I7)') GAGENUM

           OPEN (UNIT=1,FILE=INFILE,STATUS='OLD')
           OPEN (UNIT=3,FILE=OUTFILE,STATUS='NEW')
    C      OPEN (UNIT=2,FILE=GAGENUM,STATUS='NEW')

    C  ..............................................................
    C  *     READING THE FIRST FEW LINES OF THE DATA FILE           *
    C  ..............................................................
           FIRST_YEAR = 1
     3     CONTINUE
           DO 20 I=1,10
     5     READ(1,10, END=10000)TITLE(I)
    10     FORMAT(A132)
    20     CONTINUE

           READ(1,30)INFO1,YR
    30     FORMAT(A59,I4)

           READ(1,40) INFO2
    40     FORMAT(18X,A4)

    C  ..............................................................
    C  *     NOW READING THE MONTHS OF THE YEAR (TEXT) THAT         *
    C  *     PRECEED THE ACTUAL DATA:    VARIABLE:- MNTH(I)         *
    C  ..............................................................
           READ(1,50) (MNTH(I),I=1,14)
    50     FORMAT(A4,12(5X,A3),4X,A4)

    C  ..............................................................
    C  *     NOW READING THE ACTUAL FLOW INFORMATION. IE., FLOW     *
    C  *     VARIABLE:- FLOW(I,K) ON THE ITH|DAY OF THE KTH MONTH   *
    C  ..............................................................
           DO 60 I=1,31
           READ(1,70) IDAY(I), (FLOW(I,K), K = 2,13)
    60     CONTINUE
    70     FORMAT(I3,2X,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,
        *  F8.0,F8.0,F8.0)
           READ(1,40) INFO3

    C  ..............................................................
    C  *     NOW READING THE ANNUAL SUMMARY INFORMATION (FOUR LINES) *
    C  *     DEFINITIONS: AVG = TEXT AVERAGE IN THE DATA FILE       *
    C  *                 MEAN(K) = MEAN FLOW FOR THE ENTIRE MONTH 'K' *
    C  *                 HI = TEXT MAX IN DATA FILE                 *
    C  *                 MAX(K) = MAX FLOW FOR ENTIRE MONTH 'K'     *
    C  *                 LO = TEXT MIN IN DATA FILE                 *
    C  *                 MIN(K) = MIN FLOW FOR ENTIRE MONTH 'K'     *
    C  *                 AFT = VOLUME IN AC. FT. IN DATA FILE       *
    C  *                 ACFT(K) = VOLUME IN AC. FT FOR ENTIRE MONTH 'K' *
    C  ..............................................................
           READ(1,75) AVG, (MEAN(K), K=1,13)
           READ(1,75) HI, (MAX(K), K=1,13)
           READ(1,75) LO, (MIN(K), K=1,13)
```

112

```
75        FORMAT(A5,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,F8.0,
       *  F8.0,F8.0,F8.0)

C ...........................................................
C *       INITIALIZING THE NUMBER OF DAYS IN A MONTH.  THIS STEP IS    *
C *       NECESSARY IN VIEW OF THE FACT THAT EACH MONTH HAS A          *
C *       SPECIFIC NUMBER OF DAYS (IE., 28,29,30 OR 31)                *
C ...........................................................
          DO 80 K = 2, 13
                   IMAX(K) = 31
80        CONTINUE
          IMAX(3) = 30
          IMAX(8) = 30
          IMAX(10) = 30
          IMAX(13) = 30
          IMAX(6) = 28


C ...........................................................
C *       NOW CHECKING FOR LEAP YEAR CONDITION                         *
C ...........................................................

          ITOTAL_DAYS = 365
          IF (MOD(YR,4) .EQ. 0) THEN
           IMAX(6)= 29
           ITOTALS_DAYS = 366
          ENDIF

          M = 1
          DO 90 K1 = 2, 13
          DO 90 K2 = 1, IMAX(K1)
          TEMPARR(M) = FLOW(K2,K1)
          M = M+1
90        CONTINUE

C ...........................................................
C *       NOW AGGREGATING FLOW VALUES FOR DIFFERENT DURATIONS. HERE    *
C *       THE FLOWS ARE AGGREGATED FROM 1 THROUGH 10 DAYS. THEY        *
C *       CAN HOWEVER BE AGGREAGTED OVER DURATIONS OF THE USERS CHOICE *
C *       BY SUITABLY MODIFYING THE MIN_NUM_DAYS AND THE MAX_NUM_DAY   *
C *       VALUES.                                                      *
C *       MIN_NUM_DAYS = LOWEST NUMBER OF DAYS FLOWS TO BE AGGREGATED  *
C *       MAX_NUM_DAYS = HIGHEST NUMBER OF DAYS FLOWS TO BE AGGREGATED *
C ...........................................................
          MIN_NUM_DAYS = 1
          MAX_NUM_DAYS = 10
          DO 100 NUM_DAYS = MIN_NUM_DAYS, MAX_NUM_DAYS
          AMAXFLOW = -1
          DO 110 I1 = 1,ITOTAL_DAYS-(NUM_DAYS-1)
           TOTAL = 0
             DO 120 I2 = 1, NUM_DAYS
             ITEMP = I2 -1
             TOTAL =  TOTAL + TEMPARR(I1+ITEMP)
120          CONTINUE
           IF (TOTAL .GT. AMAXFLOW) THEN
           AMAXFLOW = TOTAL
           ENDIF
110       CONTINUE
          MAX_FLOW(NUM_DAYS,FIRST_YEAR) = AMAXFLOW
100       CONTINUE

C ...........................................................
C *       COMPLETED AGGREGATING FLOWS FOR 1 YEAR. GOING BACK           *
C *       TO BEGINNING OF NEXT YEAR.                                   *
C ...........................................................
          FIRST_YEAR = FIRST_YEAR + 1
          GOTO 3
10000     CONTINUE

C ...........................................................
C *       SAVING UNSORTED FLOWS IN THE VARIABLE UNSORT_FLOW            *
C ...........................................................

          DO 130 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
           DO 130 NUM_YEAR=1,FIRST_YEAR-1
           UNSORT_FLOW(NUM_DAYS,NUM_YEAR)= MAX_FLOW(NUM_DAYS,NUM_YEAR)
130       CONTINUE

C ...........................................................
C *       NOW CONVERTING UNSORTED FLOWS TO UNSORTED VOLUMES            *
```

```
C ...........................................................
      DO 140 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
        DO 140 NUM_YEAR=1,FIRST_YEAR-1
         UNSORT_VOL(NUM_DAYS,NUM_YEAR)= MAX_FLOW(NUM_DAYS,NUM_YEAR)
      .    *1.9834711
  140     CONTINUE

C ...........................................................
C *    SORTING ALGORITHM (SHELLS METHOD)                     .
C *    SORTING IS DONE TO RANK THE FLOWS AND THEREBY COMPUTE  .
C *    THEIR PLOTTING POSITIONS                               .
C *    ALGORITHM SOURCE: NUMERICAL RECIPES (FORTRAN VERSION)  .
C *                      BY     PRESS ET. AL. (1990)          .
C ...........................................................
      DO 150 NUM_DAYS = MIN_NUM_DAYS, MAX_NUM_DAYS
        DO 150 J1 =2, (FIRST_YEAR-1)
         A = MAX_FLOW(NUM_DAYS,J1)
          DO 155 I = J1-1,1,-1
           IF (MAX_FLOW(NUM_DAYS,I).GE.A) GO TO 170
           MAX_FLOW(NUM_DAYS,I+1)=MAX_FLOW(NUM_DAYS,I)
  155     CONTINUE
          I = O
  170    MAX_FLOW(NUM_DAYS,I+1)= A
  150     CONTINUE

C ...........................................................
C *    NOW CONVERTING SORTED FLOWS TO SORTED VOLUMES          .
C ...........................................................
      DO 160 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
        DO 160 NUM_YEAR=1,FIRST_YEAR-1
         SORT_VOL(NUM_DAYS,NUM_YEAR)= MAX_FLOW(NUM_DAYS,NUM_YEAR)
      .    *1.9834711
  160     CONTINUE

C ...........................................................
C *    COMPUTING THE RANKING AND PLOTTING POSITIONS           .
C ...........................................................
      RANK = 1
      DO 190 NUM_YEARS = 1, (FIRST_YEAR -1)
       REC_INT(NUM_YEARS) = (FIRST_YEAR-1+1)/RANK
       RANK= RANK + 1
  190     CONTINUE

C ...........................................................
C *    TAKING LOG's (TO THE BASE 10) OF UNSORTED VOLUMES      .
C ...........................................................
      DO 200 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
        DO 200 NUM_YEAR=1,FIRST_YEAR-1
         LOG_UNSORT_VOL(NUM_DAYS,NUM_YEAR)=
      .    LOG10(UNSORT_VOL(NUM_DAYS,NUM_YEAR))
  200     CONTINUE

C ...........................................................
C *         TAKING LOG's OF SORTED VOLUMES                    .
C ...........................................................
      DO 210 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
        DO 210 NUM_YEAR=1,FIRST_YEAR-1
         LOG_SORT_VOL(NUM_DAYS,NUM_YEAR)=
      .    LOG10(SORT_VOL(NUM_DAYS,NUM_YEAR))
  210     CONTINUE

C ...........................................................
C *         COMPUTING BASIC STATISTICS FOR FLOWS              .
C ...........................................................
      CALL STAT(MAX_FLOW,FAVE,FSDEV,FVAR,FSKEW,FCURT)

C ...........................................................
C *         COMPUTING BASIC STATISTICS FOR                    .
C *         LOGARITHMS OF FLOWS                               .
C ...........................................................
      CALL STAT(LOG_SORT_FLOW,LAVE,LSDEV,LVAR,LSKEW,LCURT)

C ...........................................................
C *         COMPUTING BASIC STATISTICS FOR VOLUMES            .
C *         OF FLOWS                                          .
C ...........................................................
      CALL STAT(UNSORT_VOL,AVEV,SDEVV,VARV,SKEWV,CURTV)

C ...........................................................
C *         COMPUTING BASIC STATISTICS FOR                    .
```

```fortran
C *               LOGARITHMS OF FLOW VOLUMES                          .
C ...........................................................................
          CALL STAT(LOG_SORT_VOL,LAVEV,LSDEVV,LVARV,LSKEWV,LCURTV)

6000      WRITE(*,*) 'NOW PRINTING RESULTS TO A FILE'



C 8888888888888888888888888888888888888888888888888888888888888888888
C ADDING NEW MODULE
C 8888888888888888888888888888888888888888888888888888888888888888888
          DO 300 A=1,LZ
            CS(A)=RCS(LZ+1-A)
          DO 300 K=1,MZ
            YK(A,K)=RYK(LZ+1-A,K)
300       CONTINUE

          DO 400 NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
          DO 330 I=1,MZ
           DO 320 K=1,MZ
            DO 310 A=1,LZ
310           X1T(A)=YK(A,K)
320         CALL FREQ(CS,X1T,LZ,LSKEWV(NUM_DAYS),X2T(K))
            CALL FREQ(T,X2T,MZ,T(I),FK(I))
330         FINAL_VOL(NUM_DAYS,I)=10.**(LAVEV(NUM_DAYS)
     *       + FK(I)*LSDEVV(NUM_DAYS))

400       CONTINUE



C 8888888888888888888888888888888888888888888888888888888888888888888
C ADDING NEW MODULE
C 8888888888888888888888888888888888888888888888888888888888888888888



C ...........................................................................
C *                OUTPUT JOBS                                        .
C ...........................................................................
          WRITE(3,*)TITLE(1)
          WRITE(3,*)TITLE(3)
          WRITE(3,*)TITLE(5)
          WRITE(3,*)TITLE(7)
          WRITE(3,*)TITLE(9)

C ...........................................................................
C *      PRINTING GENERAL OUTPUT INFORMATION                          .
C ...........................................................................
          TOT_YEAR=FIRST_YEAR-1
          WRITE(3,1270) TOT_YEAR
1270      FORMAT(1X,'TOTAL PERIOD OF RECORD:  ',I3,1X,'YRS.')

C ...........................................................................
C *      PRINTING UNSORTED FLOWS                                      .
C ...........................................................................
          WRITE(3,1280)
1280      FORMAT(1X,/1X,125(1H-)/15X,'ANNUAL MAXIMUM DAILY MEAN
     * FLOWS (CFS) FOR DIFFERENT DURATIONS (DAYS)  --
     * UNSORTED -- '/1X,125(1H-))
          WRITE(3,1282)
1282      FORMAT(11X,'1',10X,'2',11X,'3',11X,'4',11X,'5',
     * 11X,'6',11X,'7',11X,'8',11X,'9',11X,'10'/1X,125(1H-))

          DO 1290 NUM_YEAR=1,FIRST_YEAR-1
           WRITE(3,1295) (UNSORT_FLOW(NUM_DAYS,NUM_YEAR),NUM_DAYS=
     *    MIN_NUM_DAYS,MAX_NUM_DAYS)
1295       FORMAT(1X,10(2X,F10.0))
1290      CONTINUE
          WRITE(3,1299)
1299      FORMAT(1X,125(1H-))

C ...........................................................................
C *      PRINTING SORTED FLOWS                                        .
C ...........................................................................
          WRITE(3,1300)
1300      FORMAT(////1X,125(1H-)/13X,'ANNUAL MAXIMUM DAILY MEAN
     * FLOWS (CFS) FOR DIFFERENT DURATIONS (DAYS)  --
     * SORTED  --   DESCENDING ORDER  --'/1X,125(1H-))
          WRITE(3,1302)
```

```
1315      FORMAT(1X,10(2X,F10.0))
1310      CONTINUE
          WRITE(3,1320)
1320      FORMAT(1X,125(1H-))

          WRITE(3,4000)
4000      FORMAT('1')

C ...............................................................
C *       PRINTING UNSORTED VOLUMES                             .
C ...............................................................
          WRITE(3,1330)
1330      FORMAT(/1X,125(1H-)/12X,'ANNUAL MAXIMUM DAILY MEAN
     *    VOLUMES (AC. FT.) FOR DIFFERENT DURATIONS (DAYS)  --
     *    UNSORTED --'/1X,125(1H-))
          WRITE(3,1332)
1332      FORMAT(11X,'1',10X,'2',11X,'3',11X,'4',11X,'5',11X,'6',11X,
     *    '7',11X,'8',11X,'9',11X,'10'/1X,125(1H-))
          DO 1340 NUM_YEAR=1,FIRST_YEAR-1
          WRITE(3,1345) (UNSORT_VOL(NUM_DAYS,NUM_YEAR),NUM_DAYS=
     *    MIN_NUM_DAYS,MAX_NUM_DAYS)
1345      FORMAT(1X,10(2X,F10.0))
1340      CONTINUE
          WRITE(3,1349)
1349      FORMAT(1X,125(1H-))

C ...............................................................
C *       PRINTING SORTED VOLUMES                              .
C ...............................................................
          WRITE(3,1350)
1350      FORMAT(////1X,125(1H-)/10X,'ANNUAL MAXIMUM DAILY MEAN
     *    VOLUMES (AC. FT.) FOR DIFFERENT DURATIONS (DAYS) --
     *    SORTED  --  DESCENDING ORDER  --'/1X,125(1H-))
          WRITE(3,1352)
1352      FORMAT(11X,'1',10X,'2',11X,'3',11X,'4',11X,'5',11X,'6',11X,
     *    '7',11X,'8',11X,'9',11X,'10'/1X,125(1H-))

          DO 1360 NUM_YEAR=1,FIRST_YEAR-1
          WRITE(3,1365) (SORT_VOL(NUM_DAYS,NUM_YEAR),NUM_DAYS=MIN_NUM_DAYS,
     *    MAX_NUM_DAYS)
1365      FORMAT(1X,10(2X,F10.0))
1360      CONTINUE
          WRITE(3,1369)
1369      FORMAT(1X,125(1H-))

          WRITE(3,4001)
4001      FORMAT('1')

C ...............................................................
C *       PRINTING LOGARITHMS (BASE 10) OF UNSORTED VOLUMES    .
C ...............................................................

          WRITE(3,1370)
1370      FORMAT(/1X,125(1H-)/20X,'LOGARITHMS (BASE 10) OF UNSORTED VOLUMES
     *    FOR DIFFERENT DURATIONS (DAYS)'/1X,125(1H-))
          WRITE(3,1372)
1372      FORMAT(11X,'1',10X,'2',11X,'3',11X,'4',11X,'5',11X,'6',11X,
     *    '7',11X,'8',11X,'9',11X,'10'/1X,125(1H-))
          DO 1380 NUM_YEAR=1,FIRST_YEAR-1
          WRITE(3,1375) (LOG_UNSORT_VOL(NUM_DAYS,NUM_YEAR),NUM_DAYS=
     *    MIN_NUM_DAYS,MAX_NUM_DAYS)
1375      FORMAT(1X,10(2X,F10.2))
1380      CONTINUE
          WRITE(3,1382)
1382      FORMAT(1X,125(1H-))

C ...............................................................
C *       PRINTING LOGARITHMS (BASE 10) OF SORTED VOLUMES      .
C ...............................................................

          WRITE(3,1390)
1390      FORMAT(////1X,125(1H-)/20X,'LOGARITHMS (BASE 10 OF SORTED VOLUMES
     *    FOR DIFFERENT DURATIONS (DAYS) -- IN DESCENDING ORDER --'
     *    /1X,125(1H-))
          WRITE(3,1392)
1392      FORMAT(11X,'1',10X,'2',11X,'3',11X,'4',11X,'5',11X,'6',11X,
     *    '7',11X,'8',11X,'9',11X,'10'/1X,125(1H-))
          DO 1400 NUM_YEAR=1,FIRST_YEAR-1
          WRITE(3,1395) (LOG_SORT_VOL(NUM_DAYS,NUM_YEAR),
     *    NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS)
```

```
          WRITE(3.1392)
 1392     FORMAT(11X.'1'.10X.'2'.11X.'3'.11X.'4'.11X.'5'.11X.'6'.11X.
      *   '7'.11X.'8'.11X.'9'.11X.'10'/1X.125(1H-))
          DO 1400 NUM_YEAR=1.FIRST_YEAR-1
            WRITE(3.1395) (LOG_SORT_VOL(NUM_DAYS.NUM_YEAR).
      *     NUM_DAYS=MIN_NUM_DAYS.MAX_NUM_DAYS)
 1395       FORMAT(1X.10(2X.F10.2))
 1400     CONTINUE
          WRITE(3.1410)
 1410     FORMAT(1X.125(1H-))

C ....................................................
C *       PRINTING RECURRENCE INTERVALS              .
C ....................................................

          WRITE(3.*)
          WRITE(3.*) '...................................................'
          WRITE(3.*) '*   THE FOLLOWING ARE THE WEIBULL PLOTTING       *'
          WRITE(3.*) '*   POSITIONS COMPUTED BASED ON AVAILABLE RECORD *'
          WRITE(3.*) '...................................................'
          WRITE(3.*)
          WRITE(3.*) (REC_INT(NUM_YEARS).NUM_YEARS=1.(FIRST_YEAR-1))
          WRITE(3.*)
          WRITE(3.*)
          TOTAL_YEARS=FIRST_YEAR-1

          WRITE(3.4002)
 4002     FORMAT('1')

C ....................................................
C *       PRINTING STATISTICS OF FLOWS               .
C ....................................................

          WRITE(3.1420) GAGENUM
 1420     FORMAT(/1X.95(1H-)/25X.'SUMMARY STATISTICS OF FLOWS (CFS) FOR
      * GAGE #'.1X.I7.1X./1X.95(1H-))
          WRITE(3.1430)
 1430     FORMAT(9X.'DURATION'.7X.'MEAN'.10X.'STD DEV'.12X.'VAR'.10X.
      *   'SKEWNESS'.5X.'KURTOSIS'/1X.95(1H-))

          DO 1440 NUM_DAYS=MIN_NUM_DAYS.MAX_NUM_DAYS
            WRITE(3.1441)NUM_DAYS.FAVE(NUM_DAYS).FSDEV(NUM_DAYS).
      *     FVAR(NUM_DAYS).FSKEW(NUM_DAYS).FCURT(NUM_DAYS)
 1441       FORMAT(6X.I7.8X.F9.2.8X.F9.2.8X.E10.2.8X.F5.3.8X.F6.2)
 1440     CONTINUE
          WRITE(3.1442)
 1442     FORMAT(1X.95(1H-))                            /

C ....................................................
C *       PRINTING STATISTICS OF VOLUMES             .
C ....................................................

          WRITE(3.1450) GAGENUM
 1450     FORMAT(/1X.95(1H-)/25X.'SUMMARY STATISTICS OF VOLUMES
      * (AC. FT.) FOR GAGE #'.1X.I7.1X./1X.95(1H-))
          WRITE(3.1460)
 1460     FORMAT(9X.'DURATION'.7X.'MEAN'.10X.'STD DEV'.12X.'VAR'.10X.
      *   'SKEWNESS'.5X.'KURTOSIS'/1X.95(1H-))

          DO 1470 NUM_DAYS=MIN_NUM_DAYS.MAX_NUM_DAYS
            WRITE(3.1471)NUM_DAYS.AVEV(NUM_DAYS).SDEVV(NUM_DAYS).
      *     VARV(NUM_DAYS).SKEWV(NUM_DAYS).CURTV(NUM_DAYS)
 1471       FORMAT(6X.I7.8X.F9.2.8X.F9.2.8X.E10.2.8X.F5.3.8X.F6.2)
 1470     CONTINUE
          WRITE(3.1472)
 1472     FORMAT(1X.95(1H-))

          WRITE(3.4003)
 4003     FORMAT('1')

C ....................................................
C *       PRINTING STATISTICS OF LOG VOLUMES         .
C ....................................................

          WRITE(3.1480) GAGENUM
 1480     FORMAT(/1X.95(1H-)/25X.'SUMMARY STATISTICS FOR LOGARITHMS
      * OF VOLUMES GAGE #'.1X.I7.1X./1X.95(1H-))
          WRITE(3.1490)
 1490     FORMAT(4X.'DURATION'.7X.'MEAN'.10X.'STD DEV'.12X.'VAR'.10X.
      *   'SKEWNESS'.5X.'KURTOSIS'/1X.95(1H-))
```

```
        WRITE(3,1520)
  1520    FORMAT(1X,95(1H-))

C ................................................
C  *     PRINTING LOG PEARSON TYPE III ESTIMATES          *
C ................................................
        WRITE(3,5350)
  5350    FORMAT(////1X,125(1H-)/17X,'EXTREME FLOOD VOLUMES
       * (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT --
       * DURATIONS')
        WRITE(3,5352)
  5352    FORMAT(125(1H-))
        WRITE(3,5355)(T(A),A=1,MZ)
  5355    FORMAT(1X,'REC. INTERVAL (YEARS)',3X,3(F4.2,6X),
       * 4(F4.1,6X),F4.1,5X,F5.1,5X,F5.1)
        WRITE(3,5352)
        WRITE(3,5360)(PROB(A),A=1,MZ)
  5360    FORMAT(1X,'EXC. PROBABILITY (%)',4X,10(F4.1,6X))
        WRITE(3,5352)
        WRITE(3,*)'DURATION (DAYS)'
        WRITE(3,5352)

        DO 5500 NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
        WRITE(3,5365) NUM_DAYS,(FINAL_VOL(NUM_DAYS,A),A=1,MZ)
  5365    FORMAT(10X,I2,8X,10F10.0)
  5500   CONTINUE

        STOP
        END

C *******************************************************
C  *     BEGINNING OF SUBROUTINES                        *
C *******************************************************

C ................................................
C  *     SUBROUTINE TO COMPUTE STATISTICS              *
C ................................................

        SUBROUTINE STAT(MF,AVE,SDEV,VAR,SKEW,CURT)
        COMMON NUM_DYS(10),MIN_NUM_DAYS,MAX_NUM_DAYS,FIRST_YEAR

        REAL SUMF(10),AVE(10),VAR(10),SKEW(10),CURT(10),
       * P(10),SDEV(10)
        REAL MF(10,125)

        DO NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
         SUMF(NUM_DAYS)=0.
         P(NUM_DAYS)=0.
         AVE(NUM_DAYS)=0.
         SDEV(NUM_DAYS)=0.
         VAR(NUM_DAYS)=0.
         SKEW(NUM_DAYS)=0.
         CURT(NUM_DAYS)=0.
        ENDDO

        DO 220 NUM_DAYS = MIN_NUM_DAYS,MAX_NUM_DAYS
          DO 220 NUM_YEAR=1,FIRST_YEAR-1
           SUMF(NUM_DAYS)=SUMF(NUM_DAYS)+(MF(NUM_DAYS,NUM_YEAR))
  220     CONTINUE

        DO 230 NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
         AVE(NUM_DAYS)=SUMF(NUM_DAYS)/(FIRST_YEAR-1)
  230   CONTINUE

        DO 240 NUM_DAYS= MIN_NUM_DAYS,MAX_NUM_DAYS
          DO 240 NUM_YEAR=1,FIRST_YEAR-1
           SUMF(NUM_DAYS)=MF(NUM_DAYS,NUM_YEAR)-AVE(NUM_DAYS)
           P(NUM_DAYS)=SUMF(NUM_DAYS)*SUMF(NUM_DAYS)
           VAR(NUM_DAYS)=VAR(NUM_DAYS)+P(NUM_DAYS)
           P(NUM_DAYS)=P(NUM_DAYS)*SUMF(NUM_DAYS)
           SKEW(NUM_DAYS)=SKEW(NUM_DAYS)+P(NUM_DAYS)
           P(NUM_DAYS)=P(NUM_DAYS)*SUMF(NUM_DAYS)
           CURT(NUM_DAYS)=CURT(NUM_DAYS)+P(NUM_DAYS)
  240   CONTINUE

        DO 250 NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
         VAR(NUM_DAYS)=VAR(NUM_DAYS)/(FIRST_YEAR-2)
         SDEV(NUM_DAYS)=SQRT(VAR(NUM_DAYS))
  250   CONTINUE
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```fortran
      VAR(NUM_DAYS)=VAR(NUM_DAYS)/(FIRST_YEAR-2)
      SDEV(NUM_DAYS)=SQRT(VAR(NUM_DAYS))
250   CONTINUE

      IF(VAR(NUM_DAYS).NE.0)THEN
      DO 260 NUM_DAYS=MIN_NUM_DAYS,MAX_NUM_DAYS
       SKEW(NUM_DAYS)=(SKEW(NUM_DAYS)*(FIRST_YEAR-1))/
    .   (((FIRST_YEAR-1)-1)*((FIRST_YEAR-1)-2)*
    .   (SDEV(NUM_DAYS)**3))
       CURT(NUM_DAYS)=CURT(NUM_DAYS)/
    .   ((FIRST_YEAR-1)*(VAR(NUM_DAYS)**2))-3.
260   CONTINUE

      ELSE
       PAUSE 'NO SKEW OR KURTOSIS WHEN ZERO VARIANCE'
      ENDIF

      RETURN
      END

C ..........................................................
C .       SUBROUTINE TO COMPUTE FLOOD FREQUENCIES          .
C ..........................................................

      SUBROUTINE FREQ(X,Y,N,XL,YL)
      DIMENSION X(N),Y(N)

      IF(XL.LT.X(1)) THEN
       YL= ((Y(2)-Y(1))*XL+(Y(1)*X(2)-Y(2)*X(1)))/(X(2)-X(1))
      ELSEIF(XL.GE.X(N)) THEN
       K=N-1
       YL= ((Y(N)-Y(K))*XL+(Y(K)*X(N)-Y(N)*X(K)))/(X(N)-X(K))
      ELSE
       DO 500 A=2,N
        IF(XL.GE.X(A-1).AND.XL.LT.X(A)) M=A
500    CONTINUE

       L=M-1
       YL=((Y(M)-Y(L))*XL+(Y(L)*X(M)-Y(M)*X(L)))/(X(M)-X(L))
      ENDIF

      RETURN
      END

C ..........................................................
C .       END OF SUBROUTINES                               .
C ..........................................................
```

Volume-Duration-Frequencies for Ungaged Catchments in Texas

Volume II. Computations of flood volumes of varying durations and frequencies for catchments with areas greater than 300 square miles.

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ABSTRACT

This report is the second of the two volume report that summarizes results from studies to determine relationships among the volume, duration and frequencies of floods in rural unregulated catchments in Texas. The research identified methodologies to be adopted for determining flood volumes at unregulated, rural catchments. Separate methodologies were adopted for small and large watersheds. The state was divided into twelve hydrologic regions and an attempt was made to develop regional equations to estimate flood volumes for different durations and recurrence intervals. Region flood volume-duration-frequency relationships were developed in 8 of the twelve regions. The first part of this report (Volume I) presented the regional equations while Volume II (this report) lists the actual flood volumes computed for different duration-frequencies at all rural unregulated catchments that have at least 300 square miles of contributing drainage area and a minimum of 8 years of record. Not all sites listed in this volume were used in the development of the regional equations. The reasons for omitting certain sites are discussed.

DISCLAIMER

The contents of this report do not necessarily reflect the official views or policies of the U. S. Geological Survey or the Texas Department of Transportation. This report does not constitute a standard, specification or regulation. Certain limitations apply to the use of equations developed in this study. Please read the limitations section carefully. It is strongly advised that the equations not be used outside the range of data used in their development.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

INTRODUCTION

Development of flood volume-duration-frequencies for large rural catchments has been the crux of this research. Equations developed in 8 of the 12 regions are summarized in Volume I. This Volume (II) has two purposes. First, it provides the relevant background information for the regional equations listed in Volume I. Secondly, it serves as a stand alone reference for actual flood volume-duration-frequency information at all non-urban, unregulated gaged watersheds in Texas having a minimum of 8 years of record and are at least 300 square miles in size. The methodology used for the estimation of these volumes was discussed in the first volume. Owing to the magnitude of data involved in the presentation of results in this volume, the report is presented in the form of sections. The contents of individual sections are preceded by a brief description of the nature of information contained in them.

SECTION 1

Section 1 lists all the watersheds used in individual regions where volume-duration-frequency relationships were developed. The watersheds are listed by the gage (station) number of the respective monitoring location. Additionally characteristics of individual basins are also listed. Climatic characteristics are not listed because of their large spatial variability. Reference is made to standard texts in hydrology or state/federal agencies such as the National Weather Service or the U. S. Geological Survey, for mean annual precipitation (and/or the 2 year-24 hour) information at specific locations. Basin characteristics include main channel length in miles, main channel slope in feet/mile, contributing drainage area in square miles, and basin shape which is a dimensionless parameter. At ungaged sites, most basin characteristics have to be compiled unless such information is already available from previous studies. The user is strongly advised to refer to the definition of terms used in this study to enable him/her to compile the correct information. For example one would tend to use Drainage Area instead of Contributing Drainage Area in equations involving the parameter 'A.' This could lead to significant differences in volume estimates if there is a substantial difference between the the drainage area and the contributing drainage area for a particular watershed.

Certain watersheds were not used in the the development of the regional regression equations and are omitted from the data tables. These watersheds correspond to the major river basins such as Trinity, Colorado, Brazos and San Jacinto and are several thousand square miles in size and often spread over multiple hydrologic regions. By virtue of their size, they would invariably encompass several smaller drainage basins in individual regions making regionalization questionable. Thus, the number of watersheds actually used in individual regions was less than the number of watersheds available in those regions. Terms used in the following tables are defined below:

$P_{2,24}$	2 year, 24 hour precipitation, in inches;
P	Average annual precipitation, in inches
A	Contributing Drainage Area, in square miles
S_1	Main Channel Slope, in feet/mile
S_b	Basin Shape, dimensionless
L	Main Channel Length, in miles

WATERSHEDS IN REGION I.

Station	$P_{2.24}$	P	A	L	S_h	S_l
7233500	2.64	17.5	440	78.43	13.98	10.17
7235000	2.80	19.5	475	55.36	6.45	10.31
7295500	2.53	15.0	538	122.41	27.85	7.05
7297500	2.60	16.0	711	157.22	34.77	8.76
7297910	2.66	17.0	930	211.12	47.93	11.24
7298500	2.75	18.5	1581	253.99	40.80	10.97
7299200	2.75	18.5	2023	267.34	35.33	10.87
7299500	2.75	19.5	2524	289.14	33.12	10.67
7299540	2.80	19.5	2956	308.17	32.13	10.40
7299570	2.84	20.0	3552	346.44	33.79	9.87
7299670	3.27	22.0	303	42.06	5.84	10.14
7300000	2.92	21.0	1013	87.69	7.59	16.72
7301300	2.86	20.0	703	114.04	18.50	9.61
8080700	2.68	17.0	382	134.24	47.17	8.70

WATERSHEDS IN REGION II.

Station	$P_{2,24}$	P	A	L	S_h	S_l
8374000	2.00	13.0	1504	101.60	6.86	40.69
8411500	2.05	9.5	464	44.65	4.30	19.47
8434000	2.20	12.0	3709	115.57	3.60	39.18
8435800	2.31	15.0	1182	89.16	6.73	28.85
8447020	2.79	15.0	763	62.35	5.10	26.78
8449000	3.21	20.0	2730	113.22	4.70	10.49

WATERSHEDS IN REGION IV.

Station	P$_{2.24}$	P	A	L	S$_h$	S$_l$
8099500	3.72	27.0	1261	92.52	6.79	9.33
8100500	3.80	28.0	2342	214.75	19.69	5.81
8101000	3.90	28.0	455	71.88	11.36	13.24
8103800	3.89	28.0	818	65.33	5.22	13.46
8104000	3.91	29.0	1240	101.61	8.33	10.49
8123900	2.70	15.5	4737	260.66	14.34	6.70
8124000	2.80	15.5	5047	286.95	16.31	6.48
8127000	3.52	24.5	450	43.96	4.29	16.49
8128000	3.32	20.0	354	33.85	3.24	13.37
8128400	3.00	17.0	1611	102.12	6.47	7.61
8128500	3.01	17.0	1685	111.58	7.39	7.56
8129300	3.15	18.0	405	54.50	7.33	13.36
8131000	3.20	18.0	671	62.01	5.73	13.17
8133500	3.00	17.0	568	48.27	4.10	10.60
8134000	3.09	18.0	1191	83.80	5.90	9.44
8135000	3.13	18.5	1450	105.46	7.67	8.96
8136000	3.05	17.0	4411	130.70	3.87	7.53
8136500	3.18	18.0	5443	172.40	5.46	6.87
8144500	3.47	21.0	1128	58.72	3.06	9.55
8144600	3.53	22.0	1626	100.26	6.18	8.87
8145000	3.59	24.5	588	62.54	6.65	10.70
8146000	3.59	24.0	3039	156.24	8.03	8.02
8148500	3.53	22.0	914	54.71	3.27	11.87
8150000	3.55	22.5	1851	74.29	2.98	9.98
8150700	3.60	23.0	3242	128.04	5.06	8.79
8151000	3.62	23.0	3742	145.06	5.62	8.12
8151500	3.63	23.5	4192	159.74	6.09	8.24
8152000	3.85	28.0	346	48.34	6.75	24.84

WATERSHEDS IN REGION VI.

Station	$P_{2.24}$	P	A	L	S_h	S_l
8193000	3.60	22.5	4082	167.10	6.84	10.98
8194000	3.62	22.5	5171	206.02	8.21	9.38
8194200	3.92	23.0	469	41.92	3.75	9.23
8194500	3.73	21.5	8093	279.10	9.63	7.61
8194600	3.74	21.5	8561	302.76	10.71	7.21
8206600	3.75	26.0	4493	204.78	9.33	10.46
8206700	3.92	24.5	783	84.52	9.12	8.85
8207000	3.78	26.0	5491	221.33	8.92	9.95
8208000	4.03	27.0	1171	91.48	7.15	6.42
8212400	4.11	25.0	476	64.00	8.60	11.69

WATERSHEDS IN REGION VIII.

Station	$P_{2,24}$	P	A	L	S_h	S_l
8065800	4.55	41	321	37.65	4.42	7.41
8102500	3.85	28	3542	296.12	24.76	5.09
8105000	3.98	31	405	52.23	6.73	16.02
8105400	4.01	32	599	66.06	7.29	14.60
8105700	4.05	32	738	84.12	9.59	12.68
8106500	3.95	31	7065	377.85	20.21	4.46
8110000	4.39	36	1009	61.83	3.79	4.14
8110500	4.30	38	968	85.66	7.58	4.02
8111000	4.33	38	1454	121.28	10.12	3.22

WATERSHEDS IN REGION X.

Station	$P_{2.24}$	P	A	L	S_h	S_l
7342500	4.14	41.0	527	64.94	8.00	4.75
7343200	4.18	42.0	1365	109.28	8.75	3.54
7343500	4.24	43.0	494	69.05	9.65	3.94
7344000	4.24	43.0	2774	175.60	11.12	2.63
7344500	4.32	44.0	366	36.85	3.71	6.86
7346000	4.37	45.0	850	76.45	6.88	4.08
7346045	4.43	45.5	365	53.37	7.80	3.75
7346050	4.38	44.0	383	47.76	5.96	6.32
7346070	4.39	44.5	675	85.52	10.84	4.26
8018500	4.19	40.0	1357	103.03	7.82	3.41
8019000	4.24	41.5	585	50.05	4.28	4.92
8032000	4.37	41.0	1145	83.33	6.06	3.15
8032500	4.43	41.0	1945	141.95	10.36	2.40
8034500	4.45	43.0	376	39.41	4.13	5.49
8037000	4.54	44.5	1600	120.33	9.05	2.67
8038000	4.69	47.0	503	76.14	11.52	4.35

WATERSHEDS IN REGION XI.

Station	$P_{2,24}$	P	A	L	S_h	S_l
8026000	4.60	46.0	7482	364.44	17.75	1.61
8028500	4.65	47.0	8229	403.79	19.81	1.54
8030500	4.68	48.0	9329	460.62	22.74	1.42
8033000	4.50	43.0	2724	207.57	15.82	1.94
8033500	4.55	43.0	3636	253.11	17.62	1.80
8038500	4.62	45.0	2892	158.52	8.69	2.34
8039500	4.67	45.5	3486	176.87	8.97	2.04
8041000	4.70	44.0	7951	350.02	15.41	1.50
8041500	5.00	51.0	860	78.56	7.18	4.47
8041700	5.27	51.0	336	54.83	8.95	2.18

WATERSHEDS IN REGION XII.

Station	$P_{2,24}$	P	A	L	S_h	S_l
8068000	4.75	43.5	828	56.73	3.89	5.09
8068520	4.83	44.0	419	54.75	7.15	5.93
8069500	4.81	43.0	1741	82.24	3.88	4.23
8070000	4.85	45.0	325	45.22	6.29	5.51
8071500	4.87	45.0	2800	92.74	3.07	4.07
8111700	4.60	40.0	376	44.62	5.30	8.38
8117500	4.75	42.0	727	83.45	9.58	4.36

SECTION 2

Section 2 lists results obtained at all non-urban, unregulated watersheds used in this study, regardless of whether or not the individual watersheds were used in the development of regional regression equations. Three types of information are presented The first lists information pertaining to the gaging station such as the location, drainage area, period of record, etc. The second summarizes statistics of the estimated flood volumes including the mean, standard deviation, variance, skewness and kurtosis. These statistics are listed for all 10 durations of flow (1 through 10 days). The third consists of the log-Pearson type III estimates of flood volumes for different durations and recurrence intervals along with the probability of exceedence.

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STATION   : 07227470   CANADIAN RIVER AT TASCOSA, TEX.(DISC)
LOCATION   : LATITUDE N35:31:08, LONGITUDE W102:15:35
DRAINAGE AREA   : 18536.00 mi2 (48020 km2)
PERIOD OF RECORD: 10/1968 - 10/1977
GAGE ALTITUDE   : 3169.25 (965.9 m)
TOTAL PERIOD OF RECORD: 9 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7227470

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15028.10	11219.19	0.13E+09	0.957	-1.46
2	22450.69	17354.10	0.30E+09	1.082	-1.10
3	27425.90	21516.29	0.46E+09	1.181	-1.07
4	30325.07	24154.68	0.58E+09	1.208	-1.09
5	32207.17	25889.78	0.67E+09	1.251	-1.05
6	33881.88	27079.53	0.73E+09	1.281	-1.01
7	34773.55	27692.62	0.77E+09	1.302	-1.00
8	35452.79	28084.69	0.79E+09	1.302	-0.99
9	36094.11	28385.30	0.81E+09	1.315	-0.98
10	36693.77	28689.69	0.82E+09	1.323	-0.98

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4121.	4992.	6424.	11124.	21105.	30639.	47004.	63005.	82965.	107750.
2	5538.	6884.	9112.	16470.	32069.	46898.	72003.	96296.	126226.	162998.
3	6527.	8233.	11051.	20289.	39484.	57342.	86931.	114933.	148826.	189704.
4	6985.	8883.	12029.	22370.	43848.	63764.	96641.	127585.	164896.	209683.
5	7411.	9419.	12750.	23707.	46514.	67707.	102755.	135808.	175720.	223704.
6	7811.	9970.	13541.	25195.	49061.	70887.	106472.	139534.	179013.	225917.
7	8306.	10496.	14106.	25863.	50019.	72251.	108744.	142950.	184053.	233253.
8	8512.	10761.	14463.	26478.	51019.	73483.	110182.	144419.	185413.	234301.
9	8981.	11248.	14969.	27013.	51632.	74256.	111375.	146221.	188128.	238377.
10	9342.	11634.	15388.	27514.	52300.	75115.	112626.	147952.	190530.	241728.

STATION   : 07227500   CANADIAN RIVER NR AMARILLO, TX
LOCATION   : LATITUDE N35:28:13, LONGITUDE W101:52:45
DRAINAGE AREA   :   19445.00 mi2 (50375 km2)
PERIOD OF RECORD: 02/1924   - 09/1991
GAGE ALTITUDE   : 2989.16 (911.0 m)
TOTAL PERIOD OF RECORD: 56 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7227500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22337.81	23311.96	0.54E+09	3.874	17.84
2	32634.76	34885.14	0.12E+10	3.485	13.97
3	39710.16	42830.47	0.18E+10	3.216	11.58
4	45497.43	49096.68	0.24E+10	3.050	10.05
5	50053.07	54542.16	0.30E+10	3.006	9.56
6	53574.79	58518.82	0.34E+10	2.971	9.18
7	57292.71	64422.18	0.42E+10	3.168	10.52
8	60778.94	72146.13	0.52E+10	3.562	13.43
9	62864.90	74242.50	0.55E+10	3.524	12.90
10	64562.93	75351.61	0.57E+10	3.476	12.44

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	4529.	5907.	8206.	15763.	31204.	45174.	67671.	88264.	112542.	141012.
2	6212.	8149.	11415.	22381.	45482.	66917.	102177.	135043.	174394.	221172.
3	7574.	9812.	13601.	26516.	54690.	81806.	127918.	172426.	227166.	294093.
4	8697.	11206.	15462.	30061.	62357.	93892.	148228.	201413.	267522.	349269.
5	9500.	12205.	16803.	32689.	68311.	103553.	164992.	225858.	302216.	397553.
6	10259.	13127.	18004.	34875.	72881.	110686.	176932.	242944.	326121.	430474.
7	10859.	13898.	19071.	37023.	77657.	118246.	189630.	261011.	351197.	464655.
8	11651.	14774.	20093.	38654.	81294.	124512.	201869.	280380.	380975.	509173.
9	12357.	15589.	21080.	40169.	83893.	128137.	207354.	287761.	390863.	522331.
10	12917.	16257.	21919.	41530.	86215.	131256.	211658.	293054.	397214.	529780.

STATION : 7233500
LOCATION : LATITUDE N36:12:08, LONGITUDE W101:18:20, HYDROLOGICAL UNIT 11
DRAINAGE AREA : 960.00 mi2 (2487. km2)
PERIOD OF RECORD: 08/1945 - 09/1979
GAGE ALTITUDE : 2961.63 (902.7 m)
TOTAL PERIOD OF RECORD: 35 YRS.

PALO DURO CREEK NEAR SPEARMAN, TEX (DISC)

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7233500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	3623.12	4616.55	0.21E+08	2.970	7.61
2	5565.96	6856.84	0.47E+08	2.672	6.37
3	6205.60	7724.56	0.60E+08	2.688	6.46
4	6787.65	9254.42	0.86E+08	3.190	9.50
5	7064.65	9656.27	0.93E+08	3.150	9.17
6	7202.08	9787.50	0.96E+08	3.116	8.95
7	7277.46	9852.93	0.97E+08	3.105	8.87
8	7357.55	9880.07	0.98E+08	3.103	8.85
9	7419.19	9894.90	0.98E+08	3.101	8.84
10	7481.87	9905.61	0.98E+08	3.092	8.80

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	363.	534.	853.	2096.	5165.	8287.	13734.	19043.	25550.	33484.
2	480.	731.	1212.	3153.	8081.	13133.	21945.	30502.	40925.	53549.
3	544.	821.	1348.	3477.	8934.	14605.	24636.	34514.	46693.	61625.
4	577.	861.	1406.	3631.	9516.	15842.	27403.	39129.	53991.	72658.
5	588.	882.	1444.	3756.	9902.	16530.	28671.	41006.	56657.	76335.
6	595.	895.	1472.	3843.	10131.	16884.	29196.	41651.	57383.	77089.
7	600.	905.	1492.	3901.	10266.	17069.	29409.	41837.	57464.	76963.
8	614.	928.	1532.	3998.	10437.	17234.	29418.	41557.	56670.	75365.
9	634.	956.	1572.	4073.	10541.	17320.	29396.	41366.	56205.	74491.
10	643.	972.	1600.	4139.	10664.	17458.	29490.	41350.	55984.	73934.

STATION : 7235000
LOCATION : LATITUDE N36:14:19, LONGITUDE W100:16:31, HYDROLOGICAL UNIT 11
WOLF CREEK AT LIPSCOMB, TX
DRAINAGE AREA : 697.00 mi2 (1805. km2)
PERIOD OF RECORD: 10/1940 - 09/1990
GAGE ALTITUDE : 2371.29 (722.7 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7235000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	2156.35	3432.86	0.12E+08	3.505	11.80
2	2721.52	4476.03	0.20E+08	3.802	13.51
3	2985.55	5000.08	0.25E+08	3.933	14.25
4	3121.55	5148.89	0.27E+08	3.857	13.74
5	3215.34	5210.89	0.27E+08	3.830	13.58
6	3290.17	5266.96	0.28E+08	3.815	13.49
7	3353.51	5306.41	0.28E+08	3.794	13.37
8	3473.95	5386.09	0.29E+08	3.660	12.58
9	3553.22	5450.01	0.30E+08	3.587	12.12
10	3625.31	5494.80	0.30E+08	3.545	11.89

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	27.	60.	148.	743.	3176.	6383.	12862.	19741.	28531.	39534.
2	41.	88.	212.	999.	4014.	7799.	15146.	22694.	32087.	43569.
3	52.	107.	251.	1129.	4369.	8361.	16022.	23835.	33522.	45330.
4	62.	125.	282.	1208.	4543.	8625.	16478.	24535.	34604.	46977.
5	72.	143.	316.	1302.	4716.	8785.	16452.	24186.	33726.	45314.
6	81.	157.	342.	1370.	4840.	8912.	16503.	24099.	33418.	44683.
7	89.	171.	367.	1433.	4950.	9012.	16496.	23917.	32957.	43819.
8	97.	185.	392.	1498.	5118.	9299.	17030.	24732.	34165.	45558.
9	105.	197.	412.	1547.	5223.	9456.	17287.	25105.	34705.	46335.
10	113.	210.	433.	1595.	5322.	9609.	17556.	25515.	35328.	47262.

STATION : 7295500   TIERRA BLANCA CR AB BUF. LK NR UMBARGER, TEX (DISC)
LOCATION : LATITUDE N34:50:55, LONGITUDE W102:10:32, HYDROLOGICAL UNIT 11
DRAINAGE AREA : 1968.00 mi2 (5098. km2)
PERIOD OF RECORD: 12/1939 - 09/1973
GAGE ALTITUDE : 3650.00 (1112. m)
TOTAL PERIOD OF RECORD: 21 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7295500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1969.49	2801.00	0.78E+07	2.416	4.07
2	2823.11	3842.23	0.15E+08	2.211	3.40
3	3186.62	4304.99	0.19E+08	2.047	2.56
4	3500.21	4808.04	0.23E+08	2.055	2.50
5	3669.68	5102.85	0.26E+08	2.091	2.60
6	3795.60	5340.06	0.29E+08	2.138	2.74
7	3922.11	5593.08	0.31E+08	2.245	3.19
8	4093.89	5819.16	0.34E+08	2.275	3.39
9	4295.81	6133.02	0.38E+08	2.290	3.54
10	4533.92	6845.93	0.47E+08	2.584	4.85

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	32.	68.	166.	780.	3041.	5761.	10819.	15812.	21828.	28935.
2	46.	98.	235.	1096.	4359.	8431.	16296.	24345.	34335.	46518.
3	56.	116.	273.	1236.	4867.	9421.	18312.	27521.	39091.	53368.
4	61.	125.	291.	1318.	5261.	10317.	20425.	31135.	44862.	62123.
5	64.	131.	302.	1365.	5471.	10776.	21470.	32888.	47629.	66287.
6	66.	136.	315.	1418.	5648.	11077.	21948.	33486.	48303.	66969.
7	69.	141.	327.	1471.	5838.	11409.	22497.	34199.	49152.	67900.
8	69.	144.	338.	1542.	6138.	11977.	23517.	35608.	50946.	70046.
9	72.	148.	347.	1587.	6392.	12590.	25034.	38260.	55252.	76661.
10	73.	151.	350.	1605.	6573.	13128.	26593.	41215.	60360.	84911.

STATION : 7297500   PRAIRIE DOG TOWN F RED R NR CANYON, TEX (DISC)
LOCATION   : LATITUDE N35:00:38, LONGITUDE W101:53:29, HYDROLOGICAL UNIT 11
DRAINAGE AREA   : 3369.00 mi2 (8727. km2)
PERIOD OF RECORD: 02/1924 - 09/1949
GAGE ALTITUDE   : 3455.00 (1053. m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7297500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1771.95	2049.97	0.42E+07	1.887	0.87
2	2615.24	3665.80	0.13E+08	2.091	1.12
3	3343.98	4953.55	0.25E+08	2.112	1.14
4	3800.25	5860.44	0.34E+08	2.134	1.15
5	4136.32	6594.82	0.43E+08	2.165	1.22
6	4364.44	7081.47	0.50E+08	2.178	1.24
7	4535.33	7386.25	0.55E+08	2.183	1.25
8	4657.40	7602.05	0.58E+08	2.187	1.26
9	4757.37	7771.37	0.60E+08	2.190	1.27
10	4942.63	8058.04	0.65E+08	2.194	1.28

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	137.	222.	389.	1071.	2721.	4289.	6816.	9078.	11644.	14542.
2	166.	260.	448.	1279.	3671.	6386.	11545.	16942.	23926.	32873.
3	176.	282.	499.	1505.	4582.	8236.	15437.	23201.	33497.	46982.
4	180.	290.	519.	1607.	5077.	9346.	18032.	27658.	40732.	58226.
5	183.	294.	529.	1663.	5396.	10121.	19995.	31193.	46719.	67880.
6	184.	298.	536.	1705.	5622.	10655.	21312.	33538.	50661.	74209.
7	184.	300.	547.	1762.	5853.	11106.	22199.	34885.	52579.	76829.
8	184.	303.	556.	1808.	6026.	11425.	22773.	35690.	53614.	78069.
9	185.	305.	564.	1851.	6180.	11693.	23207.	36233.	54192.	78557.
10	184.	310.	580.	1937.	6489.	12221.	24023.	37194.	55097.	79082.

STATION   : 7297910   PDTF RED RIVER NR WAYSIDE, TX
LOCATION   : LATITUDE N34:50:15, LONGITUDE W101:24:49, HYDROLOGICAL UNIT 11
DRAINAGE AREA : 4211.00 mi2 (10909 km2)
PERIOD OF RECORD: 10/1967 - 09/1990
GAGE ALTITUDE : 2463.74 (750.9 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7297910

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	5757.84	9810.77	0.96E+08	3.379	8.52
2	7654.39	14180.32	0.20E+09	3.791	10.87
3	8795.82	17102.65	0.29E+09	3.977	11.95
4	9064.29	17284.13	0.30E+09	3.920	11.65
5	9355.01	17348.98	0.30E+09	3.865	11.38
6	9493.34	17391.97	0.30E+09	3.846	11.29
7	9591.07	17455.29	0.30E+09	3.821	11.15
8	9775.58	17538.80	0.31E+09	3.771	10.88
9	9883.46	17582.85	0.31E+09	3.751	10.77
10	9996.95	17625.04	0.31E+09	3.728	10.64

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	523.	707.	1053.	2509.	6940.	12565.	24874.	39719.	61675.	93700.
2	597.	830.	1273.	3184.	9100.	16665.	33179.	53045.	82265.	124664.
3	616.	868.	1355.	3500.	10304.	19148.	38670.	62373.	97462.	148683.
4	623.	887.	1397.	3648.	10758.	19939.	40004.	64151.	99581.	150867.
5	775.	1043.	1554.	3770.	10877.	20334.	42031.	69330.	111211.	174504.
6	797.	1076.	1606.	3893.	11150.	20701.	42379.	69370.	110414.	171891.
7	808.	1091.	1629.	3947.	11294.	20949.	42837.	70055.	111402.	173270.
8	839.	1133.	1690.	4082.	11591.	21380.	43392.	70568.	111595.	172615.
9	870.	1173.	1743.	4179.	11762.	21587.	43555.	70550.	111148.	171309.
10	922.	1230.	1808.	4261.	11875.	21748.	43896.	71225.	112491.	173917.

STATION   : 07298500   PRAIRIE DOG TOWN FORK RED R NR BRICE TEX (DIS
LOCATION   : LATITUDE N34:37:40, LONGITUDE W100:56:25, HYDROLOGICAL UNIT 11
DRAINAGE AREA   : 6082.00 mi2 (15756 km2)
PERIOD OF RECORD : 01/1939 - 04/1963
GAGE ALTITUDE   : 2049.63 (624.7 m)
TOTAL PERIOD OF RECORD: 11 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7298500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9284.45	7300.24	0.53E+08	1.955	1.43
2	14950.33	14929.96	0.22E+09	2.445	2.46
3	18607.84	19318.53	0.37E+09	2.362	2.24
4	20671.56	20640.65	0.43E+09	2.008	1.35
5	22114.44	21495.37	0.46E+09	1.784	0.75
6	22866.61	22044.85	0.49E+09	1.710	0.59
7	23391.33	22402.28	0.50E+09	1.653	0.45
8	23972.67	22651.70	0.51E+09	1.606	0.35
9	24600.89	22863.94	0.52E+09	1.553	0.25
10	25338.16	23450.04	0.55E+09	1.479	0.05

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2092.	2773.	3886.	7330.	13638.	18759.	26250.	32540.	39404.	46924.
2	2697.	3604.	5155.	10438.	21707.	32198.	49443.	65495.	84636.	107332.
3	2703.	3805.	5752.	12645.	27693.	41650.	64280.	85029.	109258.	137526.
4	2651.	3873.	6081.	14054.	31504.	47435.	72749.	95416.	121326.	150887.
5	2664.	3985.	6402.	15188.	34207.	51189.	77529.	100520.	126215.	154882.
6	2658.	4021.	6533.	15723.	35599.	53240.	80385.	103880.	129928.	158774.
7	2680.	4073.	6650.	16099.	36528.	54612.	82342.	106256.	132676.	161841.
8	2688.	4135.	6827.	16694.	37721.	55981.	83420.	106619.	131799.	159143.
9	2692.	4200.	7025.	17374.	39057.	57457.	84439.	106708.	130357.	155532.
10	2686.	4229.	7138.	17873.	40412.	59490.	87342.	110218.	134415.	160037.

STATION   : 07299200   PDTF RED RIVER NR LAKEVIEW,TX(DISC)
LOCATION   : LATITUDE N34:34:23, LONGITUDE W100:44:43
DRAINAGE AREA   : 6792.00 mi2 (17595 km2)
PERIOD OF RECORD: 06/1963 - 10/1980
GAGE ALTITUDE   : 1926.41 (587.1 m)
TOTAL PERIOD OF RECORD: 17 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7299200

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14661.35	11718.98	0.14E+09	2.202	2.57
2	19516.77	16097.35	0.26E+09	1.840	1.54
3	21541.55	17945.94	0.32E+09	1.613	0.49
4	22478.68	18978.85	0.36E+09	1.590	0.35
5	23388.86	19665.79	0.39E+09	1.541	0.25
6	23864.72	20000.09	0.40E+09	1.492	0.13
7	24444.92	20412.01	0.42E+09	1.434	-0.07
8	24686.35	20528.93	0.42E+09	1.424	-0.11
9	24973.93	20650.57	0.43E+09	1.403	-0.16
10	25640.01	20986.35	0.44E+09	1.347	-0.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5623.	6199.	7194.	10670.	18632.	26799.	41838.	57652.	78661.	106598.
2	6133.	7055.	8610.	13883.	25745.	37732.	59536.	82093.	111628.	150230.
3	6471.	7495.	9225.	15125.	28532.	42192.	67204.	93235.	127471.	172384.
4	6613.	7676.	9475.	15644.	29778.	44281.	71006.	98976.	135933.	184632.
5	6638.	7786.	9723.	16317.	31274.	46471.	74178.	102891.	140487.	189495.
6	6670.	7857.	9855.	16649.	32021.	47599.	75925.	105192.	143421.	193123.
7	6844.	8053.	10092.	17034.	32779.	48770.	77907.	108070.	147535.	198930.
8	6944.	8168.	10230.	17239.	33105.	49192.	78458.	108715.	148257.	199699.
9	7048.	8292.	10385.	17488.	33514.	49719.	79129.	109466.	149039.	200425.
10	7286.	8565.	10716.	18005.	34417.	50985.	81010.	111942.	152249.	204537.

STATION : 7299500   PDTF RED RIVER NEAR ESTELLINE, TEX (DISC)
LOCATION   : LATITUDE N34:30:20, LONGITUDE W100:26:10
DRAINAGE AREA   : 7293.00 mi2 (18893 km2)
PERIOD OF RECORD: 02/1924 - 06/1947
GAGE ALTITUDE   : 1754.60 (534.8 m)
TOTAL PERIOD OF RECORD: 12 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7299500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19882.65	14528.04	0.21E+09	0.675	-1.16
2	28265.79	22949.95	0.53E+09	1.069	-0.46
·3	32717.09	29203.95	0.85E+09	1.370	0.07
4	34777.16	31866.59	0.10E+10	1.408	0.09
5	36330.75	33682.32	0.11E+10	1.369	-0.09
6	39078.35	36332.67	0.13E+10	1.215	-0.57
7	42443.11	39812.53	0.16E+10	1.051	-1.04
8	45396.04	44063.21	0.19E+10	1.042	-1.16
9	45910.15	44428.99	0.20E+10	1.044	-1.15
10	46977.69	44794.18	0.20E+10	1.040	-1.12

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3427.	4856.	7311.	15335.	30583.	42985.	60921.	75699.	91506.	108466.
2	4541.	6351.	9504.	20344.	43009.	63274.	95154.	123598.	156098.	193239.
3	4793.	6698.	10073.	22170.	49299.	75191.	118311.	158813.	207175.	264711.
4	4970.	6927.	10408.	23051.	52111.	80523.	128901.	175235.	231565.	299625.
5	5174.	7174.	10733.	23749.	54135.	84351.	136644.	187458.	250093.	326665.
6	5254.	7360.	11143.	25179.	58470.	91900.	150141.	207029.	277374.	363650.
7	5330.	7528.	11519.	26643.	63566.	101492.	168814.	235623.	319321.	423187.
8	5318.	7535.	11605.	27415.	67539.	110183.	188197.	267665.	369531.	498535.
9	5391.	7647.	11788.	27839.	68405.	111329.	189524.	268878.	370240.	498213.
10	5549.	7924.	12280.	29025.	70536.	113546.	190318.	266824.	362879.	482354.

STATION : 7299540   PDTF RED RIVER NEAR CHILDRESS, TX
LOCATION : LATITUDE N34:34:09, LONGITUDE W100:11:37
DRAINAGE AREA : 7725.00 mi2 (20012 km2)
PERIOD OF RECORD: 04/1965 - 09/1990
GAGE ALTITUDE : 1628.40 (496.3 m)
TOTAL PERIOD OF RECORD: 26 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7299540

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	16686.41	16053.19	0.26E+09	1.661	1.73
2	22242.34	19924.76	0.40E+09	1.567	1.62
3	24589.63	21642.69	0.47E+09	1.548	1.66
4	26185.33	22406.36	0.50E+09	1.435	1.31
5	27178.59	22968.37	0.53E+09	1.368	1.03
6	28123.18	23678.44	0.56E+09	1.383	1.16
7	28993.93	24293.66	0.59E+09	1.455	1.50
8	29691.06	24826.12	0.62E+09	1.494	1.67
9	30819.17	25250.41	0.64E+09	1.407	1.42
10	31709.23	26206.47	0.69E+09	1.523	1.93

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2223.	3156.	4826.	10897.	24641.	37768.	59570.	79981.	104220.	132943.
2	3340.	4700.	7088.	15399.	33041.	48990.	74287.	97013.	123117.	153091.
3	3858.	5372.	8012.	17131.	36416.	53874.	81652.	106711.	135609.	168934.
4	4165.	5811.	8673.	18483.	38942.	57214.	85940.	111565.	140843.	174303.
5	4394.	6115.	9099.	19285.	40414.	59214.	88691.	114926.	144851.	179000.
6	4559.	6345.	9439.	19991.	41844.	61259.	91659.	118684.	149481.	184593.
7	4768.	6634.	9859.	20782.	43167.	62863.	93454.	120443.	151012.	185659.
8	5018.	6935.	10233.	21349.	44054.	64036.	95112.	122586.	153768.	189192.
9	5149.	7176.	10667.	22389.	46022.	66493.	97854.	125167.	155776.	190113.
10	5251.	7341.	10948.	23056.	47410.	68422.	100489.	128302.	159363.	194084.

STATION : 7299570 RED RIVER NR QUANAH, TX
LOCATION : LATITUDE N34:24:47, LONGITUDE W099:44:03
DRAINAGE AREA : 8321.00 mi2 (21556 km2)
PERIOD OF RECORD: 12/1959 - 10/1982
GAGE ALTITUDE : 1412.97 (430.6 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7299570

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22115.70	17643.99	0.31E+09	1.468	1.25
2	32457.52	24664.09	0.61E+09	0.893	-0.75
*3	37027.10	29702.46	0.88E+09	1.070	-0.50
4	39467.80	31940.72	0.10E+10	1.015	-0.69
5	41422.12	33872.51	0.11E+10	1.045	-0.58
6	43066.77	36352.55	0.13E+10	1.205	-0.03
7	44198.98	37482.81	0.14E+10	1.209	-0.04
8	45296.54	38632.31	0.15E+10	1.216	-0.07
9	47147.46	39950.48	0.16E+10	1.129	-0.27
10	48568.96	42009.55	0.18E+10	1.180	-0.20

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4286.	5798.	8339.	16567.	32555.	46130.	66682.	84452.	104282.	126466.
2	5992.	8230.	12022.	24376.	48363.	68567.	98867.	124787.	153439.	185177.
3	6883.	9300.	13398.	26985.	54451.	78645.	116444.	150092.	188554.	232573.
4	7185.	9718.	14031.	28455.	58019.	84386.	126025.	163436.	206556.	256254.
5	7384.	10017.	14516.	29657.	60945.	89021.	133572.	173758.	220224.	273932.
6	7510.	10178.	14755.	30328.	63126.	93099.	141440.	185670.	237485.	298043.
7	7702.	10424.	15095.	31017.	64690.	95604.	145680.	191673.	245753.	309154.
8	7954.	10722.	15466.	31660.	66081.	97892.	149768.	197702.	254408.	321219.
9	8014.	10888.	15840.	32849.	69153.	102706.	157338.	207731.	267179.	337081.
10	8123.	11024.	16037.	33396.	70999.	106250.	164385.	218612.	283246.	359915.

STATION   : 07299670   GROESBECK CREEK AT S.H. 6 NR QUANAH, TX
LOCATION   : LATITUDE N34:21:16, LONGITUDE W099:44:
DRAINAGE AREA   : 303.00 mi2 (784.9 km2)
PERIOD OF RECORD: 12/1961 - 09/1990
GAGE ALTITUDE   : 1425.69 (434.5 m)
TOTAL PERIOD OF RECORD: 22 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7299670

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	2683.19	2982.34	0.89E+07	1.888	2.17
2	3535.60	3491.23	0.12E+08	1.417	0.70
3	3828.64	3713.80	0.14E+08	1.345	0.40
4	3945.23	3794.06	0.14E+08	1.309	0.29
5	4078.82	3881.76	0.15E+08	1.297	0.22
6	4310.48	4146.51	0.15E+08	1.334	0.16
7	4531.73	4521.35	0.20E+08	1.487	0.61
8	4641.62	4602.40	0.21E+08	1.455	0.58
9	4681.70	4630.41	0.21E+08	1.440	0.54
10	4719.76	4647.36	0.22E+08	1.421	0.50

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	102.	219.	495.	1775.	4519.	6521.	8896.	10455.	11803.	12973.
2	145.	311.	706.	2493.	6115.	8600.	11390.	13125.	14564.	15758.
3	168.	353.	782.	2698.	6607.	9349.	12508.	14526.	16238.	17695.
4	185.	378.	819.	2761.	6772.	9663.	13091.	15349.	17310.	19024.
5	202.	407.	870.	2876.	6984.	9946.	13469.	15801.	17836.	19623.
6	222.	442.	930.	3032.	7335.	10462.	14220.	16735.	18950.	20913.
7	234.	457.	950.	3086.	7631.	11105.	15484.	18562.	21397.	23997.
8	243.	470.	970.	3135.	7806.	11442.	16109.	19449.	22577.	25480.
9	252.	481.	983.	3147.	7849.	11559.	16389.	19896.	23223.	26343.
10	260.	492.	996.	3164.	7896.	11667.	16627.	20267.	23755.	27050.

STATION   : 07300000   SALT FORK RED RIVER NR WELLINGTON, TX
LOCATION   : LATITUDE N34:57:27, LONGITUDE W100:13:14
DRAINAGE AREA   : 1222.00 mi2 (3165. km2)
PERIOD OF RECORD : 07/1952 - 09/1991
GAGE ALTITUDE   : 1941.41 (591.7 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7300000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12668.30	12240.35	0.15E+09	1.964	2.03
2	14469.82	12850.50	0.17E+09	1.715	1.16
3	15462.88	13040.97	0.17E+09	1.630	1.09
4	15939.97	13211.37	0.17E+09	1.615	1.07
5	16597.29	13212.57	0.17E+09	1.558	1.02
6	16986.98	13439.85	0.18E+09	1.558	1.06
7	17491.71	13705.69	0.19E+09	1.541	1.10
8	17958.74	13991.81	0.20E+09	1.527	1.12
9	18299.40	14150.98	0.20E+09	1.514	1.13
10	18735.07	14660.30	0.21E+09	1.586	1.36

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1265.	2041.	3518.	8984.	20159.	29273.	42071.	52194.	62587.	73210.
2	1783.	2779.	4594.	10886.	22779.	31962.	44352.	53838.	63352.	72859.
3	2041.	3153.	5154.	11936.	24349.	33688.	46029.	55307.	64487.	73528.
4	2189.	3358.	5443.	12425.	25035.	34441.	46798.	56046.	65168.	74126.
5	2357.	3627.	5879.	13277.	26127.	35352.	47054.	55540.	63703.	71515.
6	2435.	3740.	6051.	13622.	26730.	36121.	48020.	56639.	64925.	72851.
7	2515.	3867.	6258.	14077.	27551.	37159.	49277.	58020.	66398.	74385.
8	2573.	3963.	6426.	14478.	28325.	38169.	50543.	59445.	67952.	76041.
9	2634.	4058.	6580.	14803.	28874.	38829.	51289.	60216.	68720.	76782.
10	2684.	4131.	6692.	15075.	29540.	39861.	52884.	62282.	71288.	79876.

STATION : 7301300   NORTH FORK RED RIVER NR SHAMROCK, TX
LOCATION : LATITUDE N35:15:51, LONGITUDE W100:14:29
DRAINAGE AREA : 1082.00 mi2 (2803. km2)
PERIOD OF RECORD: 03/1964 - 09/1990
GAGE ALTITUDE : 2165.55 (660.0 m)
TOTAL PERIOD OF RECORD: 27 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7301300

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	3269.86	2973.01	0.88E+07	2.178	4.06
2	4477.58	3815.81	0.15E+08	1.923	2.70
3	5134.68	4084.66	0.17E+08	1.568	1.53
4	5581.29	4424.40	0.20E+08	1.588	1.51
5	5987.92	5032.28	0.25E+08	1.975	3.06
6	6357.58	5556.75	0.31E+08	2.227	4.30
7	6583.74	5661.31	0.32E+08	2.164	4.09
8	6782.33	5711.93	0.33E+08	2.142	3.99
9	7014.17	5747.24	0.33E+08	2.163	4.07
10	7197.10	5794.29	0.34E+08	2.141	4.00

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	541.	762.	1142.	2398.	4847.	6891.	9921.	12475.	15261.	18303.
2	836.	1145.	1666.	3351.	6581.	9273.	13277.	16677.	20413.	24529.
3	1018.	1378.	1978.	3895.	7538.	10567.	15072.	18904.	23124.	27784.
4	1172.	1558.	2199.	4234.	8116.	11381.	16299.	20540.	25268.	30555.
5	1306.	1700.	2351.	4442.	8559.	12160.	17793.	22821.	28618.	35287.
6	1401.	1805.	2473.	4638.	9000.	12915.	19190.	24913.	31649.	39534.
7	1474.	1894.	2587.	4825.	9318.	13341.	19780.	25645.	32544.	40613.
8	1630.	2058.	2759.	5007.	9507.	13553.	20067.	26056.	33149.	41514.
9	1846.	2284.	2995.	5245.	9716.	13737.	20225.	26229.	33370.	41846.
10	1956.	2406.	3131.	5418.	9938.	13992.	20520.	26559.	33737.	42257.

STATION   : 7307800   PEASE RIVER NR CHILDRESS, TX
LOCATION   : LATITUDE N34:13:39, LONGITUDE W100:04:24
DRAINAGE AREA : 2754.00 mi2 (7134. km2)
PERIOD OF RECORD: 12/1959 - 09/1990
GAGE ALTITUDE : 1492.98 (455.0 m)
TOTAL PERIOD OF RECORD: 26 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7307800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	7959.06	6944.48	0.48E+08	1.588	1.41
2	11198.83	9948.45	0.99E+08	1.569	1.08
3	12768.60	11442.35	0.13E+09	1.714	1.69
4	13742.48	12103.17	0.15E+09	1.646	1.48
5	14346.03	12388.79	0.15E+09	1.597	1.33
6	14995.45	12598.19	0.16E+09	1.552	1.25
7	15570.69	12914.13	0.17E+09	1.463	0.94
8	16060.74	13099.38	0.17E+09	1.400	0.76
9	16620.07	13338.35	0.18E+09	1.300	0.49
10	16964.34	13494.32	0.18E+09	1.250	0.34

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	25.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1359.	1865.	2735.	5668.	11699.	17056.	25462.	32963.	41544.	51369.
2	1989.	2671.	3837.	7805.	16212.	23973.	36626.	48315.	62151.	78456.
3	2338.	3114.	4435.	8909.	18384.	27156.	41519.	54843.	70691.	89440.
4	2528.	3375.	4814.	9669.	19853.	29193.	44351.	58305.	74781.	94151.
5	2689.	3589.	5114.	10214.	20768.	30327.	45670.	59659.	76036.	95148.
6	2850.	3822.	5462.	10880.	21833.	31518.	46725.	60325.	75958.	93925.
7	3006.	4014.	5713.	11314.	22639.	32676.	48478.	62647.	78983.	97803.
8	3195.	4237.	5985.	11722.	23290.	33548.	49732.	64274.	81090.	100503.
9	3274.	4362.	6191.	12185.	24208.	34797.	51383.	66191.	83203.	102738.
10	3353.	4467.	6338.	12465.	24729.	35508.	52365.	67393.	84634.	104412.

STATION   : 7308000
LOCATION   : LATITUDE N34:05:45, LONGITUDE W099:43:47
DRAINAGE AREA   : 3037.00 mi2 (7867. km2)
PERIOD OF RECORD: 01/1924 - 06/1947
GAGE ALTITUDE   : 1330.44 (405.5 m)
TOTAL PERIOD OF RECORD: 23 YRS.

PEASE RIVER NR CROWELL TEX (DISC)

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7308000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	38290.48	33724.50	0.11E+10	1.823	2.19
2	50488.48	41632.37	0.17E+10	1.511	0.97
3	54643.51	44105.96	0.19E+10	1.495	0.92
4	57515.93	46181.77	0.21E+10	1.496	0.91
5	59857.97	48866.30	0.24E+10	1.587	1.20
6	63059.29	51491.95	0.27E+10	1.562	1.22
7	65216.89	53108.04	0.28E+10	1.448	0.84
8	66593.49	54430.53	0.30E+10	1.427	0.70
9	68932.77	57467.65	0.33E+10	1.533	1.05
10	70594.84	60330.05	0.36E+10	1.637	1.41

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5176.	7843.	12614.	28779.	59122.	82735.	115048.	140180.	165718.	191697.
2	7041.	10703.	17212.	38948.	78488.	108322.	148015.	178100.	208070.	237877.
3	7995.	12068.	19237.	42790.	84707.	115804.	156637.	187239.	217471.	247277.
4	8602.	12913.	20468.	45153.	88940.	121417.	164115.	196171.	227888.	259235.
5	9117.	13557.	21317.	46645.	92053.	126235.	171877.	206666.	241497.	276426.
6	9502.	14132.	22245.	48865.	97055.	133659.	182918.	220731.	258794.	297194.
7	9637.	14363.	22682.	50186.	100567.	139215.	191649.	232187.	273213.	314840.
8	9792.	14589.	23040.	51057.	102658.	142450.	196692.	238808.	281572.	325122.
9	10211.	15094.	23698.	52303.	105795.	147783.	206018.	251980.	299242.	348091.
10	10545.	15432.	24023.	52746.	107632.	151807.	214613.	265378.	318655.	374820.

STATION : 7308200   PEASE RIVER NR VERNON, TX
LOCATION : LATITUDE N34:10:44, LONGITUDE W099:16:40
DRAINAGE AREA : 3488.00 mi2 (9036. km2)
PERIOD OF RECORD: 12/1959 - 09/1982
GAGE ALTITUDE : 1166.03 (355.4 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7308200

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12660.24	8504.48	0.72E+08	0.713	-0.63
2	19676.03	13852.78	0.19E+09	0.919	-0.28
3	22314.82	14896.22	0.22E+09	0.833	-0.42
4	24015.27	15719.22	0.25E+09	0.854	-0.33
5	25582.21	16306.47	0.27E+09	0.765	-0.46
6	26946.92	16638.23	0.28E+09	0.689	-0.57
7	27989.02	16891.27	0.29E+09	0.634	-0.64
8	28972.56	17060.99	0.29E+09	0.562	-0.71
9	29795.71	17149.75	0.29E+09	0.501	-0.75
10	30508.89	17236.67	0.30E+09	0.438	-0.79

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1956.	3038.	4926.	10797.	19908.	25750.	32433.	36841.	40760.	44249.
2	2865.	4515.	7433.	16641.	31059.	40302.	50840.	57753.	63864.	69282.
3	3576.	5564.	9007.	19453.	34891.	44298.	54602.	61112.	66687.	71514.
4	3972.	6189.	10001.	21328.	37397.	46776.	56673.	62698.	67694.	71910.
5	4246.	6672.	10846.	23077.	39838.	49222.	58767.	64370.	68885.	72582.
6	4557.	7212.	11768.	24821.	41845.	50836.	59513.	64338.	68060.	70962.
7	4828.	7654.	12487.	26115.	43303.	52066.	60264.	64696.	68029.	70569.
8	5062.	8055.	13162.	27370.	44710.	53230.	60935.	64968.	67911.	70090.
9	5271.	8416.	13771.	28474.	45859.	54091.	61282.	64918.	67480.	69316.
10	5439.	8712.	14277.	29404.	46860.	54898.	61745.	65115.	67443.	69072.

STATION : 7308500   RED RIVER NEAR BURKBURNETT, TX
LOCATION   : LATITUDE N34:06:36, LONGITUDE WO98:31:53
DRAINAGE AREA : 2057.00 mi2 (5329. km2)
PERIOD OF RECORD: 01/1960 - 09/1990
GAGE ALTITUDE : 952.57 (290.3 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7308500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	59148.84	48948.49	0.24E+10	2.111	4.26
2	107683.81	91310.89	0.83E+10	2.008	3.58
3	141980.34	120050.20	0.14E+11	1.984	3.33
4	165605.45	140706.91	0.20E+11	2.041	3.52
5	181943.81	152594.98	0.23E+11	2.021	3.44
6	193128.48	157913.55	0.25E+11	1.992	3.37
7	202012.59	161023.00	0.26E+11	1.958	3.28
8	210119.52	164918.17	0.27E+11	1.935	3.21
9	219507.28	170598.88	0.29E+11	1.841	2.85
10	229740.39	176875.14	0.31E+11	1.742	2.43

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	10438.	14830.	22301.	46003.	88615.	121506.	166905.	202736.	239690.	278055.
2	17148.	24907.	38376.	82271.	163072.	226120.	313482.	382502.	453596.	527302.
3	22514.	32923.	50982.	109524.	215382.	296374.	406510.	492001.	578834.	667485.
4	25987.	38243.	59518.	128400.	251666.	344790.	469845.	565761.	662287.	759756.
5	28863.	42592.	66344.	142660.	276787.	376297.	507731.	607008.	705754.	804131.
6	31406.	46459.	72332.	154312.	294737.	394860.	524399.	619859.	713042.	803869.
7	33637.	49886.	77659.	164383.	307856.	408161.	533686.	623914.	710296.	792725.
8	35624.	52864.	82228.	172933.	320004.	420887.	544982.	632839.	715934.	794293.
9	37039.	55103.	85908.	181046.	334800.	439805.	568372.	659000.	744404.	824647.
10	38638.	57624.	90031.	190014.	350826.	460016.	592916.	686086.	773484.	855225.

STATION   : 0731160O   NORTH WICHITA RIVER NR PADUCAH,TX(DISC)
LOCATION   : LATITUDE N33:57:02, LONGITUDE W100:03:52
DRAINAGE AREA   : 540.00 mi2 (1398. km2)
PERIOD OF RECORD: 02/1951 - 10/1982
GAGE ALTITUDE   : 1530.00 (466.3 m)
TOTAL PERIOD OF RECORD: 21 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7311600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	2950.46	2372.60	0.56E+07	1.457	1.35
2	3764.82	2924.69	0.86E+07	1.130	0.74
3	3951.45	3066.63	0.94E+07	1.160	0.82
4	4037.95	3159.25	0.10E+08	1.261	1.14
5	4160.18	3241.48	0.11E+08	1.242	1.12
6	4470.57	3674.67	0.14E+08	1.363	0.90
7	4653.84	3785.16	0.14E+08	1.305	0.69
8	4768.90	3904.14	0.15E+08	1.382	0.86
9	4852.19	4001.80	0.16E+08	1.462	1.11
10	4912.04	4031.87	0.16E+08	1.451	1.07

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	361.	569.	950.	2267.	4703.	6535.	8941.	10736.	12499.	14220.
2	424.	684.	1167.	2877.	6087.	8508.	11678.	14032.	16334.	18567.
3	450.	725.	1237.	3036.	6384.	8887.	12140.	14540.	16874.	19127.
4	469.	752.	1275.	3105.	6502.	9043.	12351.	14796.	17179.	19484.
5	484.	776.	1315.	3203.	6701.	9313.	12710.	15218.	17660.	20020.
6	504.	807.	1369.	3363.	7166.	10085.	13977.	16915.	19828.	22692.
7	529.	848.	1442.	3534.	7467.	10442.	14351.	17266.	20126.	22910.
8	552.	883.	1496.	3640.	7630.	10624.	14535.	17434.	20266.	23013.
9	572.	911.	1535.	3710.	7740.	10761.	14705.	17631.	20491.	23267.
10	593.	938.	1572.	3765.	7815.	10848.	14814.	17760.	20645.	23449.

STATION : 07311700 NORTH WICHITA RIVER NR TRUSCOTT, TX
LOCATION : LATITUDE N33:49:14, LONGITUDE W099:47:10
DRAINAGE AREA : 937.00 mi2 (2427. km2)
PERIOD OF RECORD: 12/1959 - 09/1991
GAGE ALTITUDE : 1351.78 (412.0 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7311700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8717.95	10147.34	0.10E+09	2.164	2.63
2	13417.99	14624.68	0.21E+09	1.987	2.07
3	14708.90	16005.53	0.26E+09	2.025	2.24
4	15237.49	16393.51	0.27E+09	2.013	2.24
5	15830.22	16788.54	0.28E+09	2.011	2.27
6	16402.05	16936.91	0.29E+09	1.966	2.19
7	16794.65	17265.95	0.30E+09	1.988	2.31
8	17313.13	18130.80	0.33E+09	2.070	2.65
9	17691.97	18326.70	0.34E+09	2.066	2.67
10	18080.86	18722.51	0.35E+09	2.110	2.88

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	869.	1351.	2258.	5627.	12899.	19254.	28829.	36936.	45737.	55294.
2	1308.	2079.	3540.	8967.	20340.	29906.	43764.	55055.	66922.	79388.
3	1470.	2324.	3936.	9879.	22266.	32660.	47702.	59955.	72832.	86366.
4	1566.	2457.	4130.	10267.	23056.	33824.	49483.	62304.	75835.	90131.
5	1666.	2609.	4372.	10788.	24001.	35017.	50907.	63824.	77381.	91626.
6	1758.	2762.	4631.	11378.	25007.	36156.	51957.	64598.	77704.	91284.
7	1849.	2889.	4816.	11723.	25566.	36839.	52775.	65499.	78674.	92316.
8	1915.	2973.	4932.	11962.	26217.	37988.	54857.	68503.	82778.	97735.
9	2056.	3141.	5131.	12220.	26676.	38771.	56380.	70853.	86201.	102521.
10	2245.	3347.	5341.	12392.	26981.	39504.	58271.	74155.	91457.	110317.

STATION : 7311790   SOUTH WICHITA RIVER AT ROSS RANCH NR BENJAMIN, TX
LOCATION : LATITUDE N33:39:18, LONGITUDE W100:00:49
DRAINAGE AREA : 499.00 mi2 (1292. km2)
PERIOD OF RECORD: 10/1970 - 09/1979
GAGE ALTITUDE : 1450.00 (441.9 m)
TOTAL PERIOD OF RECORD: 9 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7311790

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	834.16	658.11	0.43E+06	1.757	0.60
2	1172.45	836.91	0.70E+06	1.648	0.54
3	1364.63	938.75	0.88E+06	1.537	0.39
4	1523.97	1002.65	0.10E+07	1.235	-0.05
5	1615.98	1030.01	0.11E+07	1.128	-0.22
6	1711.91	1085.01	0.12E+07	1.346	-0.01
7	1843.48	1281.48	0.16E+07	1.782	0.61
8	1927.98	1390.17	0.19E+07	1.925	0.83
9	2027.55	1471.16	0.22E+07	1.872	0.73
10	2116.23	1519.53	0.23E+07	1.699	0.39

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	149.	214.	324.	671.	1285.	1749.	2377.	2862.	3355.	3858.
2	247.	346.	508.	991.	1778.	2336.	3057.	3592.	4118.	4638.
3	292.	411.	606.	1176.	2070.	2680.	3438.	3982.	4504.	5005.
4	318.	455.	680.	1336.	2329.	2980.	3756.	4293.	4793.	5256.
5	346.	496.	740.	1439.	2461.	3110.	3862.	4368.	4829.	5248.
6	460.	605.	833.	1477.	2504.	3240.	4210.	4952.	5700.	6463.
7	522.	659.	875.	1515.	2643.	3546.	4864.	5972.	7189.	8530.
8	556.	691.	906.	1553.	2738.	3727.	5225.	6526.	8001.	9669.
9	572.	714.	940.	1626.	2889.	3949.	5558.	6961.	8555.	10360.
10	581.	731.	970.	1698.	3035.	4151.	5834.	7294.	8941.	10797.

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STATION   : 07311800   SOUTH WICHITA RIVER NR BENJAMIN, TX
LOCATION   : LATITUDE N33:38:39, LONGITUDE WO99:48:02
DRAINAGE AREA : 584.00 mi2 (1512. km2)
PERIOD OF RECORD: 12/1959 - 09/1991
GAGE ALTITUDE : 1334.23 (406.6 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7311800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	4920.99	4262.71	0.18E+08	1.510	0.93
2	7728.93	6949.63	0.48E+08	1.498	1.00
3	8624.33	7802.57	0.61E+08	1.571	1.49
4	9279.87	8424.48	0.71E+08	1.579	1.56
5	9602.26	8615.84	0.74E+08	1.590	1.57
6	9986.08	8753.79	0.77E+08	1.528	1.42
7	10280.47	8839.14	0.78E+08	1.510	1.42
8	10597.23	8941.35	0.80E+08	1.458	1.29
9	11028.92	9236.54	0.85E+08	1.350	0.86
10	11327.93	9453.03	0.89E+08	1.315	0.72

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	877.	1190.	1725.	3514.	7177.	10433.	15558.	20147.	25418.	31476.
2	1184.	1654.	2478.	5336.	11409.	16920.	25702.	33632.	42781.	53335.
3	1303.	1825.	2739.	5926.	12737.	18949.	28883.	37882.	48293.	60331.
4	1390.	1948.	2928.	6352.	13705.	20434.	31231.	41039.	52409.	65585.
5	1488.	2077.	3105.	6659.	14175.	20972.	31771.	41500.	52703.	65606.
6	1540.	2168.	3263.	7027.	14850.	21786.	32606.	42177.	53033.	65349.
7	1606.	2270.	3425.	7353.	15353.	22301.	32941.	42187.	52522.	64080.
8	1663.	2360.	3572.	7668.	15894.	22927.	33550.	42655.	52718.	63846.
9	1749.	2468.	3717.	7946.	16504.	23894.	35162.	44915.	55783.	67899.
10	1807.	2545.	3824.	8156.	16936.	24540.	36169.	46264.	57542.	70149.

STATION   : 07311900   WICHITA RIVER NEAR SEYMORE,TEX(DISC)
LOCATION   : LATITUDE N33:42:01, LONGITUDE W099:23:18
DRAINAGE AREA   : 1874.00 mi2 (4854. km2)
PERIOD OF RECORD: 12/1959   - 10/1979
GAGE ALTITUDE   : 1152.70 (351.3 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7311900

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14122.31	8658.06	0.75E+08	1.026	-0.58
2	22651.03	13753.60	0.19E+09	1.487	0.82
3	27335.68	16855.73	0.28E+09	1.449	0.71
4	29447.55	18150.93	0.33E+09	1.395	0.54
5	30833.16	18804.40	0.35E+09	1.389	0.57
6	32146.43	19227.78	0.37E+09	1.400	0.67
7	33129.82	19501.97	0.38E+09	1.408	0.67
8	34254.55	20031.56	0.40E+09	1.448	0.69
9	35268.94	20645.69	0.43E+09	1.497	0.74
10	36150.64	21275.30	0.45E+09	1.504	0.76

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4268.	5373.	7086.	11942.	19950.	25990.	34368.	41106.	48228.	55813.
2	7078.	8967.	11851.	19721.	31873.	40476.	51793.	60444.	69221.	78205.
3	8173.	10481.	14028.	23757.	38759.	49313.	63082.	73520.	84024.	94698.
4	8663.	11168.	15029.	25621.	41886.	53257.	67998.	79101.	90207.	101435.
5	9075.	11737.	15835.	26999.	43891.	55525.	70399.	81459.	92398.	103348.
6	9526.	12376.	16746.	28491.	45766.	57331.	71746.	82209.	92348.	102309.
7	10015.	12994.	17530.	29593.	47016.	58494.	72612.	82739.	92469.	101934.
8	10900.	13885.	18405.	30432.	48140.	60120.	75258.	86411.	97374.	108288.
9	11777.	14711.	19135.	31017.	49075.	61754.	78361.	91029.	103868.	117005.
10	12163.	15117.	19577.	31631.	50196.	63424.	80973.	94533.	108421.	122778.

STATION : 7342500
LOCATION : LATITUDE N33:21:20, LONGITUDE W095:35:39
DRAINAGE AREA : 527.00 mi2 (1365. km2)
PERIOD OF RECORD: 06/1942 - 09/1990
GAGE ALTITUDE : 371.91 (113.3 m)
TOTAL PERIOD OF RECORD: 48 YRS.

SOUTH SULPHUR RIVER NEAR COOPER, TX

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7342500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	27051.24	15782.05	0.25E+09	1.209	1.14
2	46797.11	26953.55	0.73E+09	1.278	1.34
3	60026.04	33030.98	0.11E+10	1.172	1.24
4	68961.16	36903.50	0.14E+10	1.038	0.70
5	75001.75	40636.27	0.17E+10	1.014	0.47
6	79370.83	45024.39	0.20E+10	1.177	0.93
7	82906.58	48464.22	0.23E+10	1.301	1.39
8	85831.57	51254.38	0.26E+10	1.416	1.87
9	88358.81	53076.70	0.28E+10	1.467	2.08
10	90821.25	54386.48	0.30E+10	1.471	2.17

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	8525.	10738.	14115.	23380.	37866.	48268.	62128.	72861.	83866.	95247.
2	15208.	19047.	24872.	40702.	65176.	82615.	105725.	123541.	141751.	160532.
3	20167.	25172.	32707.	52859.	83301.	104561.	132289.	153358.	174646.	196361.
4	23609.	29399.	38077.	61100.	95478.	119260.	150047.	173287.	196646.	220361.
5	25166.	31481.	40978.	66280.	104192.	130452.	164452.	190109.	215881.	242032.
6	25897.	32445.	42368.	69244.	110566.	139852.	178489.	208150.	238363.	269419.
7	26428.	33217.	43557.	71815.	115796.	147276.	189122.	221464.	254578.	288782.
8	27093.	34051.	44679.	73922.	119930.	153194.	197775.	232501.	268278.	305456.
9	27790.	34951.	45898.	76042.	123512.	157849.	203885.	239752.	276708.	315114.
10	28301.	35750.	47138.	78405.	127258.	162268.	208813.	244768.	281555.	319517.

STATION : 7343200   SULPHUR RIVER NEAR TALCO, TX
LOCATION : LATITUDE N33:23:10, LONGITUDE W095:07:56
DRAINAGE AREA : 1365.00 mi2 (3536. km2)
PERIOD OF RECORD: 10/1956 - 09/1990
GAGE ALTITUDE : 290.82 (88.64 m)
TOTAL PERIOD OF RECORD: 34 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7343200

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	58722.42	27896.19	0.78E+09	0.675	-0.45
2	106497.81	51818.34	0.27E+10	0.775	-0.23
3	146114.16	69672.98	0.49E+10	0.675	-0.45
4	178958.67	85221.82	0.73E+10	0.625	-0.49
5	206037.73	98662.67	0.97E+10	0.610	-0.48
6	226532.84	114772.02	0.13E+11	0.734	-0.23
7	240940.38	128620.20	0.17E+11	0.875	0.03
8	252731.97	139971.44	0.20E+11	0.988	0.34
9	263673.03	149228.30	0.22E+11	1.088	0.68
10	273745.84	156871.11	0.25E+11	1.131	0.87

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	21827.	27000.	34586.	53780.	80410.	97696.	118929.	134220.	149001.	163504.
2	39096.	48398.	62089.	97011.	146096.	178329.	218308.	247352.	275637.	303568.
3	52982.	66226.	85667.	134563.	201055.	243225.	293877.	329571.	363439.	396085.
4	63520.	80100.	104426.	165465.	247290.	298304.	358572.	400379.	439582.	476809.
5	72611.	91615.	119569.	190013.	285128.	344809.	415692.	465097.	511588.	555911.
6	76226.	96624.	127077.	205669.	315989.	387556.	474891.	537238.	596948.	655007.
7	78515.	99591.	131358.	215198.	337456.	419584.	522849.	598619.	672862.	746572.
8	80081.	101839.	134859.	223299.	355237.	445631.	561160.	647178.	732493.	818105.
9	81921.	104553.	139034.	231960.	371604.	467763.	591093.	683179.	774702.	866710.
10	83194.	106790.	142878.	240464.	387214.	488068.	617026.	712991.	808045.	903317.

STATION   : 7343500   WHITE OAK CREEK NR BOGOTA, TEX (DISC)
LOCATION   : LATITUDE N33:19:20, LONGITUDE W095:05:33
DRAINAGE AREA   : 494.00 mi2 (1279. km2)
PERIOD OF RECORD : 12/1949 - 09/1990
GAGE ALTITUDE   : 286.45 (87.30 m)
TOTAL PERIOD OF RECORD: 41 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7343500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	27143.56	15851.94	0.25E+09	0.942	0.81
2	47969.05	28639.29	0.82E+09	1.059	0.95
3	62027.98	35694.77	0.13E+10	0.950	0.59
4	72222.05	40745.05	0.17E+10	0.908	0.32
5	80435.07	46251.35	0.21E+10	1.025	0.45
6	87368.13	52415.00	0.27E+10	1.297	1.28
7	92370.06	56739.68	0.32E+10	1.474	1.92
8	96135.07	60418.30	0.37E+10	1.595	2.33
9	99286.38	62984.66	0.40E+10	1.664	2.62
10	102196.03	64626.52	0.42E+10	1.660	2.65

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	6353.	8932.	13033.	24337.	40207.	49978.	61053.	68378.	74958.	80872.
2	11585.	16010.	23008.	42430.	70592.	88636.	109944.	124584.	138163.	150770.
3	16052.	21802.	30767.	55246.	90374.	112857.	139508.	157907.	175055.	191063.
4	19911.	26541.	36770.	64388.	104111.	129840.	160818.	182554.	203078.	222577.
5	22948.	30077.	41076.	70908.	115082.	144719.	181647.	208426.	234352.	259764.
6	25324.	32779.	44288.	75879.	124249.	157915.	201349.	233907.	266330.	298982.
7	26864.	34646.	46661.	79786.	131055.	167152.	214228.	249877.	285698.	322058.
8	27872.	35860.	48212.	82489.	136233.	174562.	225127.	263832.	303082.	343249.
9	28618.	36871.	49645.	85123.	140769.	180440.	232745.	272756.	313303.	354771.
10	29294.	37859.	51119.	87861.	145099.	185602.	238627.	278915.	319500.	360790.

STATION   : 07344000   SULPHUR RIVER NR DARDEN, TEX.(DISC)
LOCATION   : LATITUDE N33:15:00, LONGITUDE W094:37:00
DRAINAGE AREA   : 2774.00 mi2 (7186. km2)
PERIOD OF RECORD: 10/1923 - 12/1956
GAGE ALTITUDE   : 220.61 (67.24 m)
TOTAL PERIOD OF RECORD: 33 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7344000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	76610.08	55821.79	0.31E+10	2.182	5.30
2	146626.58	104296.46	0.11E+11	1.984	4.28
3	206353.14	146825.70	0.22E+11	2.098	4.91
4	255293.81	178742.77	0.32E+11	2.052	4.71
5	294384.41	201146.30	0.40E+11	1.962	4.27
6	325617.47	216955.77	0.47E+11	1.867	3.83
7	352002.47	230207.31	0.53E+11	1.829	3.69
8	374896.53	238821.11	0.57E+11	1.761	3.45
9	395533.03	245097.16	0.60E+11	1.675	3.15
10	416448.47	251354.03	0.63E+11	1.549	2.73

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	21310.	26765.	35405.	61221.	107528.	145312.	201328.	249125.	302329.	361602.
2	41125.	51639.	68265.	117748.	205955.	277524.	383125.	472862.	572383.	682915.
3	58931.	73705.	97006.	166129.	288992.	388588.	535523.	660386.	798956.	952900.
4	74011.	92409.	121341.	206695.	357227.	478466.	656399.	806934.	973365.	1157656.
5	87483.	108851.	142305.	240221.	411078.	547550.	746544.	913976.	1098272.	1301547.
6	98792.	122656.	159860.	267861.	454112.	601416.	814483.	992531.	1187361.	1401172.
7	108653.	134675.	175096.	291575.	490307.	646053.	869649.	1055307.	1257337.	1478010.
8	117313.	145574.	189280.	313823.	522428.	683060.	910200.	1096361.	1296480.	1512918.
9	124888.	155398.	202376.	334673.	551840.	715796.	943748.	1127755.	1322893.	1531489.
10	131161.	164173.	214824.	355889.	582709.	750334.	979189.	1160681.	1350402.	1550369.

STATION   : 07344500   BIG CYPRESS CREEK NR PITTSBURG, TX
LOCATION   : LATITUDE N33:01:15, LONGITUDE WO94:52:55
DRAINAGE AREA   : 366.OO mi2 (948.1 km2)
PERIOD OF RECORD: O4/1943 - 09/1990
GAGE ALTITUDE   : 247.49 (75.43 m)
TOTAL PERIOD OF RECORD: 22 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7344500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	20105.19	21982.84	0.48E+09	2.500	4.50
2	33856.95	35263.98	0.12E+10	2.516	4.73
3	41515.41	40989.47	0.17E+10	2.490	4.79
4	47207.52	44157.53	0.19E+10	2.385	4.38
5	52205.32	47906.48	0.23E+10	2.257	3.58
6	55585.16	50121.72	0.25E+10	2.218	3.32
7	58228.22	51528.72	0.27E+10	2.167	3.06
8	60606.13	52684.06	0.28E+10	2.128	2.87
9	63084.39	53950.77	0.29E+10	2.099	2.72
10	64907.20	54547.14	0.30E+10	2.089	2.68

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3257.	4327.	6187.	12816.	28132.	43503.	70517.	97301.	130950.	172888.
2	5861.	7770.	11051.	22470.	47823.	72391.	114284.	154625.	204180.	264552.
3	7862.	10318.	14479.	28587.	58789.	87220.	134571.	179220.	233183.	297905.
4	9587.	12493.	17360.	33508.	67015.	97769.	147929.	194353.	249640.	315033.
5	11036.	14253.	19614.	37289.	73815.	107336.	162076.	212878.	273517.	345438.
6	12254.	15701.	21411.	40078.	78324.	113260.	170143.	222875.	285746.	360291.
7	13358.	16965.	22914.	42251.	81730.	117795.	176583.	231248.	296553.	374216.
8	14452.	18198.	24350.	44246.	84734.	121725.	182088.	238382.	305762.	386118.
9	15374.	19307.	25742.	46426.	88163.	126044.	187529.	244605.	312673.	393572.
10	16441.	20492.	27091.	48158.	90377.	128558.	190389.	247750.	316105.	397342.

STATION   : 07346000   BIG CYPRESS CREEK NR JEFFERSON, TX
LOCATION   : LATITUDE N32:44:58, LONGITUDE W094:29:55
DRAINAGE AREA   :   708.01 mi2 (1834. km2)
PERIOD OF RECORD : 08/1924 - 09/1990
GAGE ALTITUDE   :   180.00 (54.86 m)
TOTAL PERIOD OF RECORD: 33 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7346000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22644.03	24252.36	0.59E+09	2.000	3.26
2	42253.95	44103.59	0.19E+10	1.955	3.10
3	58003.91	58551.64	0.34E+10	1.869	2.68
4	71179.70	69983.33	0.49E+10	1.789	2.31
5	81554.80	78644.69	0.62E+10	1.813	2.45
6	90271.38	84900.55	0.72E+10	1.789	2.37
7	97368.13	88860.54	0.79E+10	1.745	2.23
8	103627.95	91909.13	0.84E+10	1.707	2.10
9	109141.60	93927.66	0.88E+10	1.667	1.99
10	114055.73	95398.07	0.91E+10	1.621	1.87

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2411.	3525.	5591.	13575.	33137.	52947.	87405.	120927.	161970.	211955.
2	4786.	6939.	10896.	25927.	61964.	97881.	159572.	218966.	291085.	378268.
3	7108.	10198.	15805.	36642.	85213.	132624.	212732.	288810.	380196.	489600.
4	9311.	13220.	20238.	45880.	104487.	160956.	255486.	344590.	451067.	577915.
5	11426.	16052.	24264.	53715.	119525.	181949.	285231.	381659.	496076.	631497.
6	13428.	18711.	27998.	60736.	132279.	199020.	308006.	408653.	527043.	666078.
7	15355.	21249.	31511.	67040.	142785.	212072.	323417.	424860.	542849.	680049.
8	17211.	23687.	34863.	72895.	152048.	223046.	335341.	436238.	552283.	685836.
9	18977.	26023.	38080.	78421.	160309.	232224.	344005.	442882.	555193.	682922.
10	20610.	28186.	41057.	83480.	167685.	240219.	351182.	447924.	556551.	678736.

STATION : 7346045
LOCATION : LATITUDE N32:46:40, LONGITUDE W094:21:26
DRAINAGE AREA : 365.00 mi2 (945.5 km2)
PERIOD OF RECORD: 10/1968 - 09/1990
GAGE ALTITUDE : 171.47 (52.26 m)
TOTAL PERIOD OF RECORD: 21 YRS.

BLACK CYPRESS BAYOU AT JEFFERSON, TX

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7346045

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	6869.71	5172.76	0.27E+08	1.296	0.58
2	13117.07	10040.33	0.10E+09	1.406	0.85
3	18199.76	13519.17	0.18E+09	1.337	0.61
4	22430.42	16215.30	0.26E+09	1.250	0.27
5	26010.21	18342.67	0.34E+09	1.207	0.17
6	28740.31	19611.89	0.38E+09	1.148	0.05
7	31164.39	20640.10	0.43E+09	1.114	-0.01
8	33267.91	21338.69	0.46E+09	1.076	-0.05
9	35363.68	22069.89	0.49E+09	1.012	-0.20
10	37419.42	22887.34	0.52E+09	0.961	-0.34

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1180.	1719.	2639.	5533.	10493.	14111.	18834.	22369.	25861.	29320.
2	2313.	3332.	5064.	10497.	19907.	26880.	36132.	43168.	50208.	57289.
3	3407.	4855.	7288.	14776.	27472.	36742.	48920.	58107.	67247.	76392.
4	4396.	6217.	9245.	18429.	33719.	44737.	59075.	69807.	80424.	90990.
5	5326.	7474.	11014.	21603.	38934.	51274.	67198.	79035.	90687.	102229.
6	6147.	8581.	12551.	24228.	42866.	55866.	72364.	84451.	96222.	107746.
7	6959.	9661.	14025.	26645.	46281.	59694.	76430.	88510.	100145.	111400.
8	7721.	10684.	15420.	28877.	49218.	62761.	79298.	91005.	102119.	112692.
9	8434.	11651.	16755.	31062.	52176.	65931.	82416.	93891.	104645.	114730.
10	9118.	12571.	18024.	33140.	55067.	69137.	85785.	97246.	107893.	117797.

STATION : 7346050   LITTLE CYPRESS CREEK NR ORE CITY, TX
LOCATION : LATITUDE N32:40:21, LONGITUDE WO94:45:03
DRAINAGE AREA : 383.00 mi2 (992.2 km2)
PERIOD OF RECORD: 01/1963 - 09/1990
GAGE ALTITUDE : 232.67 (70.91 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7346050

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10211.33	10150.07	0.10E+09	1.506	1.15
2	17842.10	17791.76	0.32E+09	1.752	2.19
3	23983.71	23512.52	0.55E+09	1.963	3.33
4	28388.15	26870.41	0.72E+09	2.041	3.84
5	31817.36	29410.55	0.86E+09	2.142	4.40
6	34480.80	30925.30	0.96E+09	2.183	4.69
7	36960.00	32632.65	0.11E+10	2.287	5.27
8	39333.58	35104.89	0.12E+10	2.479	6.24
9	42077.71	38110.85	0.15E+10	2.522	6.36
10	44824.25	41377.50	0.17E+10	2.524	6.18

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	758.	1291.	2363.	6677.	16274.	24507.	36437.	46090.	56154.	66556.
2	1472.	2461.	4408.	11990.	28244.	41850.	61227.	76690.	92654.	109007.
3	2147.	3567.	6316.	16718.	38015.	55150.	78736.	96995.	115416.	133814.
4	2790.	4596.	8037.	20613.	45027.	63807.	88688.	107325.	125649.	143503.
5	3407.	5549.	9564.	23799.	50313.	70049.	95508.	114154.	132169.	149437.
6	3983.	6425.	10941.	26511.	54401.	74509.	99771.	117857.	135024.	151203.
7	4534.	7247.	12203.	28936.	58102.	78695.	104143.	122111.	138985.	154729.
8	5015.	7933.	13215.	30872.	61487.	83117.	109949.	128976.	146921.	163744.
9	5441.	8528.	14090.	32711.	65464.	89036.	118851.	140381.	161001.	180632.
10	5841.	9064.	14853.	34343.	69373.	95224.	128762.	153549.	177747.	201227.

STATION : 7346070
LOCATION : LATITUDE N32:42:50, LONGITUDE W094:20:44
DRAINAGE AREA : 675.00 mi2 (1748. km2)
PERIOD OF RECORD: 06/1946 - 09/1990
GAGE ALTITUDE : 174.60 (53.21 m)
TOTAL PERIOD OF RECORD: 45 YRS.

LITTLE CYPRESS CREEK NEAR JEFFERSON, TX

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 7346070

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12506.05	12750.10	0.16E+09	2.238	4.94
2	24134.08	23922.33	0.57E+09	2.030	3.72
3	34131.48	33733.07	0.11E+10	2.082	4.02
4	42657.24	41538.54	0.17E+10	2.059	3.95
5	50197.61	47971.63	0.23E+10	2.007	3.66
6	56968.02	53771.05	0.29E+10	2.006	3.66
7	62884.94	58726.25	0.34E+10	2.035	3.83
8	68225.86	63317.08	0.40E+10	2.095	4.15
9	73153.73	67432.02	0.45E+10	2.123	4.31
10	77643.16	70843.67	0.50E+10	2.135	4.39

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1462.	2212.	3586.	8514.	18801.	27637.	40840.	51966.	64026.	77110.
2	2883.	4353.	7035.	16591.	36360.	53219.	78265.	99264.	121933.	146438.
3	4252.	6357.	10170.	23616.	51222.	74714.	109626.	138940.	170650.	204997.
4	5530.	8208.	13020.	29814.	63922.	92764.	135463.	171219.	209837.	251609.
5	6752.	9965.	15701.	35503.	75201.	108463.	157371.	198100.	241905.	289112.
6	7938.	11646.	18222.	40696.	85232.	122259.	176408.	221309.	269451.	321190.
7	9118.	13279.	20606.	45372.	93875.	133909.	192184.	240339.	291854.	347110.
8	10278.	14857.	22861.	49639.	101555.	144161.	205980.	256956.	311426.	369797.
9	11412.	16370.	24980.	53547.	108556.	153585.	218891.	272764.	330389.	392203.
10	12515.	17845.	27044.	57292.	114980.	161920.	229737.	285522.	345080.	408865.

STATION : 08018500   SABINE RIVER NR MINEOLA, TX
LOCATION : LATITUDE N32:36:49, LONGITUDE W095:29:08
DRAINAGE AREA : 1357.00 mi2 (3515. km2)
PERIOD OF RECORD: 06/1939 - 09/1990
GAGE ALTITUDE : 304.16 (92.70 m)
TOTAL PERIOD OF RECORD: 20 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8018500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	53824.46	37895.25	0.14E+10	0.766	-0.53
2	100424.16	72738.24	0.53E+10	0.879	-0.37
.3	137361.34	99584.10	0.99E+10	0.954	-0.11
4	165747.77	122125.20	0.15E+11	1.043	-0.03
5	187192.08	135727.47	0.18E+11	0.970	-0.17
6	203593.41	145159.73	0.21E+11	0.860	-0.49
7	217488.59	154162.58	0.24E+11	0.810	-0.67
8	228787.45	161527.69	0.26E+11	0.777	-0.81
9	238357.80	167815.78	0.28E+11	0.748	-0.90
10	247130.47	173186.92	0.30E+11	0.729	-0.96

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	9633.	13679.	20567.	42485.	82112.	112870.	155538.	189372.	224406.	260909.
2	18234.	25564.	38001.	77906.	152057.	211444.	296395.	365770.	439495.	518136.
3	25898.	35903.	52760.	106562.	206697.	287417.	403844.	499750.	602508.	712936.
4	32361.	44203.	64050.	127457.	247145.	345622.	490566.	612480.	745466.	890935.
5	37423.	50911.	73420.	144852.	278635.	388126.	548674.	683309.	829852.	989841.
6	41447.	56214.	80777.	158333.	302721.	420414.	592492.	736467.	892914.	1063463.
7	44896.	60651.	86803.	169236.	322736.	448125.	631913.	786127.	954126.	1137754.
8	47690.	64260.	91724.	178162.	339045.	470569.	663563.	825727.	1002607.	1196201.
9	49692.	66967.	95600.	185697.	353313.	490273.	691154.	859870.	1043832.	1245105.
10	51725.	69702.	99472.	192961.	366336.	507592.	714269.	887460.	1075956.	1281829.

STATION   : 08019000   LAKE FORK CREEK NR QUITMAN, TX
LOCATION   : LATITUDE N32:45:47, LONGITUDE W095:27:46
DRAINAGE AREA   : 585.00 mi2 (1515. km2)
PERIOD OF RECORD: 07/1924 - 09/1990
GAGE ALTITUDE   : 317.42 (96.74 m)
TOTAL PERIOD OF RECORD: 43 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8019000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	26779.17	25342.42	0.64E+09	2.522	7.18
2	46909.09	43323.16	0.19E+10	2.477	7.06
3	58035.44	49948.63	0.25E+10	2.281	6.25
4	66317.59	55643.96	0.31E+10	2.254	6.17
5	72792.90	60422.98	0.37E+10	2.178	5.55
6	78671.22	65192.70	0.43E+10	2.042	4.51
7	82718.69	68380.83	0.47E+10	1.981	3.99
8	86527.63	71137.84	0.51E+10	1.932	3.59
9	90293.32	73935.89	0.55E+10	1.851	3.11
10	93667.85	76075.73	0.58E+10	1.745	2.62

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4004.	5733.	8759.	19059.	39831.	57581.	84330.	107182.	132356.	160092.
2	7223.	10333.	15749.	33954.	69905.	100060.	144769.	182411.	223377.	268015.
3	9735.	13799.	20775.	43533.	86601.	121494.	171785.	213089.	257150.	304307.
4	11888.	16621.	24642.	50391.	98405.	137031.	192536.	238066.	286642.	338641.
5	13642.	18835.	27565.	55409.	107359.	149410.	210331.	260741.	314972.	373470.
6	14984.	20534.	29845.	59584.	115540.	161370.	228523.	284745.	345832.	412387.
7	16038.	21849.	31571.	62582.	121087.	169262.	240250.	300044.	365355.	436895.
8	16832.	22946.	33167.	65685.	126734.	176758.	250156.	311729.	378757.	451939.
9	17327.	23715.	34418.	68533.	132579.	184955.	261620.	325754.	395398.	471238.
10	17558.	24206.	35389.	71140.	138184.	192755.	272211.	338281.	409649.	486941.

STATION   : 08020000   SABINE RIVER NR GLADEWATER, TX
LOCATION   : LATITUDE N32:31:37, LONGITUDE W094:57:36
DRAINAGE AREA   : 2791.00 mi2 (7230. km2)
PERIOD OF RECORD : 10/1932   - 09/1990
GAGE ALTITUDE   : 243.85 (74.32 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8020000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	55105.79	55140.67	0.30E+10	2.172	4.67
2	106663.99	104555.02	0.11E+11	2.077	4.23
3	153231.64	144947.20	0.21E+11	1.907	3.48
4	195878.41	182914.86	0.33E+11	1.869	3.30
5	232454.30	213001.53	0.45E+11	1.815	3.06
6	263195.97	235332.02	0.55E+11	1.743	2.74
7	289430.25	252107.97	0.64E+11	1.655	2.35
8	313413.25	268030.41	0.72E+11	1.605	2.11
9	334758.28	280712.06	0.79E+11	1.539	1.81
10	353362.50	290435.47	0.84E+11	1.482	1.56

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	7568.	10511.	15756.	34979.	79951.	124721.	202252.	277625.	370546.	484169.
2	15105.	20908.	31201.	68588.	154981.	240148.	386453.	527714.	700883.	911558.
3	22487.	31079.	46233.	100584.	223668.	342857.	544426.	736423.	968986.	1248971.
4	29642.	40791.	60361.	129942.	285789.	435477.	687015.	925333.	1212803.	1557581.
5	36672.	50176.	73717.	156447.	338965.	512319.	801073.	1072651.	1398358.	1786952.
6	43473.	59148.	86269.	180272.	383808.	574305.	887863.	1179817.	1527093.	1938378.
7	49980.	67646.	97990.	201718.	422085.	625246.	955556.	1259911.	1618829.	2040646.
8	56274.	75733.	108942.	221218.	456420.	671039.	1017214.	1334084.	1705850.	2140734.
9	62370.	83478.	119282.	239093.	486833.	710763.	1069350.	1395608.	1776632.	2220464.
10	68422.	91040.	129161.	255387.	512984.	743650.	1110414.	1442158.	1827888.	2275377.

STATION : 8020500
LOCATION : LATITUDE N32:28:00, LONGITUDE W094:46:50   SABINE RIVER NR LONGVIEW TEX (DISC)
DRAINAGE AREA : 2947.00 mi2 (7634. km2)
PERIOD OF RECORD: 01/1904 - 12/1932
GAGE ALTITUDE : 228.67 (69.69 m)
TOTAL PERIOD OF RECORD: 12 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8020500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	23932.23	12708.71	0.16E+09	0.029	-1.80
2	47168.60	25761.99	0.66E+09	-.005	-1.78
3	69641.32	38817.73	0.15E+10	-.026	-1.75
4	91158.68	51606.28	0.27E+10	-.028	-1.72
5	111749.76	64137.48	0.41E+10	-.019	-1.69
6	131698.52	76170.65	0.58E+10	0.000	-1.66
7	150634.89	87882.66	0.77E+10	0.017	-1.64
8	168307.28	98926.79	0.98E+10	0.029	-1.61
9	185665.45	110257.61	0.12E+11	0.045	-1.59
10	202399.83	121331.91	0.15E+11	0.069	-1.57

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	6837.	8965.	12263.	21268.	34763.	43914.	55420.	63830.	72021.	80103.
2	12204.	16468.	23172.	41810.	69720.	88378.	111392.	127881.	143689.	158954.
3	16314.	22738.	33000.	61936.	104697.	132465.	165570.	188491.	209869.	229818.
4	19745.	28235.	42022.	81314.	138787.	175259.	217529.	246006.	271945.	295561.
5	22783.	33204.	50358.	99763.	171769.	216821.	268054.	301918.	332241.	359353.
6	25993.	38293.	58678.	117692.	203389.	256477.	316200.	355224.	389798.	420466.
7	28736.	42788.	66249.	134614.	233780.	294747.	362740.	406736.	445357.	479388.
8	30830.	46546.	73021.	150686.	262748.	330690.	405334.	452845.	493907.	529688.
9	32403.	49698.	79157.	166386.	291861.	366924.	448138.	498939.	542107.	579267.
10	33820.	52624.	84979.	181598.	320125.	401921.	489096.	542690.	587455.	625511.

STATION   : 08022500   SABINE RIVER AT LOGANSPORT, LA
LOCATION   : LATITUDE N31:58:20, LONGITUDE W094:00:22
DRAINAGE AREA   : 4842.00 mi2 (12544 km2)
PERIOD OF RECORD: 07/1903 - 04/1968
GAGE ALTITUDE   :   147.72 (45.02 m)
TOTAL PERIOD OF RECORD: 57 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8022500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	44572.77	32250.55	0.10E+10	1.680	3.61
2	87703.55	63805.16	0.41E+10	1.720	3.77
3	129397.48	94045.67	0.88E+10	1.727	3.79
4	168551.56	121936.15	0.15E+11	1.732	3.76
5	205603.86	148743.14	0.22E+11	1.774	3.94
6	240046.27	173005.83	0.30E+11	1.791	3.99
7	272363.63	194926.77	0.38E+11	1.783	3.91
8	302739.66	214925.84	0.46E+11	1.763	3.79
9	331385.81	233446.28	0.54E+11	1.745	3.71
10	358368.34	250188.28	0.63E+11	1.708	3.51

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	10963.	14218.	19457.	35310.	63739.	86596.	119874.	147770.	178199.	211563.
2	21774.	28123.	38336.	69290.	125098.	170266.	236425.	292225.	353407.	420834.
3	32181.	41572.	56671.	102369.	184569.	250954.	348011.	429731.	519207.	617685.
4	42407.	54683.	74378.	133775.	240129.	325730.	450565.	555448.	670099.	796096.
5	52355.	67323.	91296.	163435.	292370.	396095.	547360.	674490.	813515.	966374.
6	61878.	79388.	107374.	191328.	340845.	460854.	635588.	782269.	942540.	1118631.
7	70958.	90928.	122778.	217931.	386425.	521031.	716293.	879666.	1057713.	1252859.
8	79260.	101646.	137287.	243306.	429680.	577544.	790791.	968231.	1160751.	1370852.
9	86948.	111693.	151030.	267537.	470744.	630694.	859820.	1049238.	1253673.	1475628.
10	94106.	121141.	164062.	290647.	509663.	680640.	923820.	1123471.	1337738.	1569088.

STATION : 8024400   SABINE RIVER NR MILAM, TEX. (DISC)
LOCATION   : LATITUDE N31:28:01, LONGITUDE WO93:44:41
DRAINAGE AREA   : 6508.00 mi2 (16860 km2)
PERIOD OF RECORD: 01/1939 - 09/1966
GAGE ALTITUDE   : 97.96 (29.85 m)
TOTAL PERIOD OF RECORD: 27 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8024400

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	58923.79	38747.02	0.15E+10	1.224	0.19
2	116945.46	76788.93	0.59E+10	1.242	0.26
3	173683.02	113738.88	0.13E+11	1.241	0.26
4	228751.56	149488.38	0.22E+11	1.254	0.31
5	281292.94	182545.92	0.33E+11	1.259	0.35
6	332005.16	213818.16	0.46E+11	1.257	0.37
7	380498.13	243789.44	0.59E+11	1.255	0.39
8	426660.81	271696.13	0.74E+11	1.242	0.37
9	470516.13	298358.59	0.89E+11	1.231	0.36
10	511967.78	323179.56	0.10E+12	1.217	0.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	18314.	22376.	28741.	47619.	81569.	109636.	151877.	188482.	229898.	276661.
2	36508.	44576.	57209.	94627.	161799.	217255.	300629.	372811.	454422.	546512.
3	54418.	66410.	85176.	140696.	240210.	322267.	445516.	552132.	672595.	808441.
4	71905.	87731.	112477.	185579.	316296.	423863.	585160.	724463.	881671.	1058739.
5	88886.	108487.	139079.	229094.	388991.	519777.	714908.	882572.	1071081.	1282575.
6	105470.	128765.	165057.	271432.	459163.	611812.	838446.	1032205.	1249262.	1491855.
7	121022.	147906.	189741.	311971.	526533.	700091.	956602.	1175025.	1418813.	1690440.
8	135560.	165997.	213306.	351005.	591105.	784007.	1067394.	1307448.	1574035.	1869864.
9	148920.	182792.	235410.	388107.	652851.	864262.	1173133.	1433534.	1721349.	2039542.
10	161446.	198628.	256353.	423397.	711419.	940049.	1272272.	1551050.	1857744.	2195566.

STATION   : 08026000   SABINE RIVER NR BURKEVILLE, TX
LOCATION   : LATITUDE N31:03:50, LONGITUDE W093:31:10
DRAINAGE AREA   : 7482.00 mi2 (19383 km2)
PERIOD OF RECORD: 09/1955 - 09/1990
GAGE ALTITUDE   : 70.59 (21.51 m)
TOTAL PERIOD OF RECORD: 10 YRS.

F VOLUMES (AC. FT.) FOR GAGE # 8026000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	52641.32	27176.88	0.74E+09	0.801	-1.11
2	103652.23	54843.90	0.30E+10	0.791	-1.12
3	152598.36	83183.45	0.69E+10	0.832	-1.11
4	198932.23	112489.01	0.13E+11	0.845	-1.13
5	244643.30	142021.23	0.20E+11	0.823	-1.15
6	290626.19	171073.63	0.29E+11	0.796	-1.16
7	335754.06	198857.14	0.40E+11	0.780	-1.18
8	379660.19	226507.69	0.51E+11	0.775	-1.19
9	421451.94	253394.70	0.64E+11	0.767	-1.21
10	461835.44	280071.00	0.78E+11	0.763	-1.22

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	20193.	24172.	30133.	46344.	72058.	91185.	117609.	138855.	161442.	185574.
2	37511.	45683.	57981.	91356.	143677.	181896.	233768.	274820.	317716.	362962.
3	53942.	65807.	83781.	133213.	212251.	270994.	351850.	416635.	485042.	557864.
4	66232.	81949.	105949.	172549.	279732.	359398.	468842.	556269.	648238.	745815.
5	76020.	95941.	126582.	211934.	348508.	448616.	584218.	690844.	801503.	917288.
6	85158.	109536.	147291.	252515.	418729.	538074.	696447.	818324.	942472.	1070027.
7	96637.	124862.	168713.	291315.	485277.	624475.	808927.	950627.	1094701.	1242487.
8	108337.	140023.	189362.	328050.	549395.	709484.	923022.	1088043.	1256662.	1430383.
9	119126.	154013.	208471.	362469.	610666.	791742.	1035061.	1224348.	1418832.	1620184.
10	129132.	167055.	226410.	395296.	670155.	872400.	1146108.	1360407.	1581753.	1812006.

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STATION   : 08028500   SABINE RIVER NR BON WEIR, TX
LOCATION   : LATITUDE N30:44:49, LONGITUDE WO93:36:30
DRAINAGE AREA   : 8229.00 mi2 (21318 km2)
PERIOD OF RECORD : 10/1923 - 09/1990
GAGE ALTITUDE   : 43.42 (13.23 m)
TOTAL PERIOD OF RECORD: 42 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8028500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	70919.50	39971.79	0.16E+10	1.627	2.85
2	140153.03	78903.84	0.62E+10	1.650	3.02
3	205967.91	114778.35	0.13E+11	1.537	2.55
4	268671.06	148396.42	0.22E+11	1.421	2.08
5	328060.47	180363.50	0.33E+11	1.342	1.79
6	384881.72	211473.98	0.45E+11	1.301	1.63
7	439700.56	241772.17	0.58E+11	1.266	1.50
8	493071.66	270507.56	0.73E+11	1.246	1.44
9	544303.31	298346.69	0.89E+11	1.223	1.35
10	593014.44	325298.59	0.11E+12	1.197	1.25

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	23376.	29715.	39212.	63860.	98702.	121422.	149248.	169175.	188299.	206935.
2	46418.	58911.	77623.	126172.	194896.	239796.	294902.	334441.	372451.	409557.
3	66330.	85333.	113739.	187017.	288024.	352029.	428326.	481577.	531713.	579413.
4	84054.	109572.	147719.	245787.	377886.	459241.	553529.	617563.	676609.	731301.
5	100195.	132013.	179719.	301864.	463394.	560670.	670871.	744161.	810587.	871030.
6	117021.	154258.	210161.	353669.	544234.	659410.	790291.	877565.	956834.	1029107.
7	132977.	175389.	239151.	403350.	622473.	755490.	907206.	1008701.	1101122.	1185594.
8	148855.	196474.	268087.	452490.	698353.	847422.	1017227.	1130688.	1233901.	1328144.
9	164083.	216582.	295571.	499196.	771223.	936453.	1124971.	1251112.	1365990.	1470996.
10	178491.	235434.	321173.	542819.	840608.	1022511.	1231133.	1371374.	1499572.	1617187.

STATION   : 08030500   SABINE RIVER NR RULIFF, TX
LOCATION   : LATITUDE N30:18:13, LONGITUDE W093:44:37
DRAINAGE AREA   : 9329.00 mi2 (24168 km2)
PERIOD OF RECORD : 10/1924 - 09/1990
GAGE ALTITUDE   : 4.08 (1.243 m)
TOTAL PERIOD OF RECORD: 42 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8030500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	87546.66	42438.17	0.18E+10	1.294	1.75
2	172949.23	83906.09	0.70E+10	1.275	1.59
3	255017.77	124861.95	0.16E+11	1.271	1.56
4	333719.06	164109.45	0.27E+11	1.242	1.40
5	409169.38	201525.81	0.41E+11	1.183	1.15
6	480208.72	236839.42	0.56E+11	1.153	1.04
7	547586.38	271276.03	0.74E+11	1.128	0.95
8	611181.13	303637.31	0.92E+11	1.095	0.84
9	671351.13	334495.03	0.11E+12	1.060	0.72
10	728504.88	363586.75	0.13E+12	1.024	0.60

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	38258.	44390.	53433.	77580.	115281.	143223.	181856.	212971.	246244.	281887.
2	75545.	87644.	105495.	153193.	227743.	283049.	359575.	421261.	487261.	558003.
3	109822.	127875.	154525.	225733.	336842.	419069.	532597.	623828.	721254.	825430.
4	142172.	166056.	201316.	295415.	441849.	549854.	698515.	817671.	944547.	1079940.
5	171025.	201101.	245455.	363129.	544248.	676220.	855914.	998635.	1149150.	1308646.
6	196808.	233154.	286693.	427737.	641838.	795446.	1001722.	1163640.	1332313.	1509447.
7	219286.	261979.	324838.	489401.	735833.	909849.	1140218.	1318763.	1502408.	1693360.
8	238954.	288164.	360518.	548521.	825602.	1017737.	1268163.	1459220.	1653228.	1852407.
9	256315.	311945.	393713.	604886.	911579.	1120540.	1388743.	1590160.	1792058.	1996681.
10	273036.	334639.	425240.	658303.	993095.	1218228.	1503751.	1715619.	1925843.	2136852.

STATION : 08032000 NECHES RIVER NEAR NECHES, TEXAS
LOCATION : LATITUDE N31:53:32, LONGITUDE W095:25:50
DRAINAGE AREA : 1145.00 mi2 (2966. km2)
PERIOD OF RECORD: 03/1939 - 09/1990
GAGE ALTITUDE : 264.06 (80.48 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8032000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	20678.46	18491.25	0.34E+09	2.294	4.72
2	39889.33	34598.01	0.12E+10	2.099	3.86
3	57009.97	49344.98	0.24E+10	2.130	4.07
4	71783.73	61058.88	0.37E+10	2.016	3.61
5	84340.13	70304.53	0.49E+10	1.856	2.94
6	94934.28	76781.95	0.59E+10	1.706	2.35
7	103952.67	82601.59	0.68E+10	1.648	2.12
8	111380.00	86519.37	0.75E+10	1.576	1.85
9	117754.88	89376.89	0.80E+10	1.508	1.58
10	123374.15	91977.07	0.85E+10	1.457	1.37

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2983.	4459.	7065.	15723.	31661.	43925.	60595.	73502.	86577.	99854.
2	5868.	8756.	13834.	30595.	61152.	84476.	115977.	140227.	164689.	189416.
3	8593.	12716.	19939.	43685.	87108.	120481.	165916.	201177.	236974.	273452.
4	11109.	16315.	25396.	55103.	109450.	151391.	208796.	253598.	299286.	346113.
5	13405.	19536.	30187.	64863.	128333.	177517.	245199.	298317.	352726.	408813.
6	15632.	22669.	34809.	73878.	144300.	198237.	271797.	329091.	387451.	447277.
7	17702.	25512.	38899.	81558.	157615.	215460.	293983.	354925.	416843.	480184.
8	19620.	28159.	42689.	88429.	168564.	228661.	309331.	371338.	433888.	497401.
9	21492.	30714.	46282.	94659.	177815.	239222.	320640.	382555.	444519.	506914.
10	23122.	32945.	49427.	100131.	185970.	248570.	330731.	392659.	454231.	515795.

STATION   : 08032500   NECHES RIVER NR ALTO,TEX(DISC)
LOCATION   : LATITUDE N31:34:45, LONGITUDE W095:09:55
DRAINAGE AREA   : 1945.00 mi2 (5038. km2)
PERIOD OF RECORD: 01/1944 - 12/1978
GAGE ALTITUDE   : 198.29 (60.43 m)
TOTAL PERIOD OF RECORD: 18 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8032500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	24449.59	22165.30	0.49E+09	1.384	0.41
2	48132.23	43928.71	0.19E+10	1.441	0.56
3	69660.62	63258.72	0.40E+10	1.428	0.51
4	89073.28	80494.60	0.65E+10	1.435	0.53
5	106672.18	95598.27	0.91E+10	1.431	0.50
6	121954.84	107043.12	0.11E+11	1.378	0.35
7	136657.88	118678.27	0.14E+11	1.348	0.23
8	149935.00	128272.27	0.16E+11	1.303	0.06
9	161657.31	135603.66	0.18E+11	1.249	-0.11
10	172440.78	142104.53	0.20E+11	1.204	-0.24

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3671.	5082.	7567.	16404.	36119.	54931.	86315.	115856.	151246.	193451.
2	7304.	10076.	14946.	32251.	70904.	107889.	169796.	228243.	298495.	382501.
3	10829.	14855.	21899.	46825.	102342.	155473.	244524.	328721.	430143.	551619.
4	14206.	19374.	28382.	60107.	130521.	197874.	310844.	417753.	546752.	701444.
5	17549.	23798.	34635.	72527.	155973.	235429.	368313.	493786.	645009.	826117.
6	20747.	28032.	40595.	84065.	178409.	267197.	414257.	551979.	716833.	913065.
7	23789.	32026.	46180.	94861.	199740.	297938.	459964.	611223.	791864.	1006423.
8	26799.	35960.	51633.	105108.	219072.	324876.	498263.	659194.	850482.	1076728.
9	29709.	39766.	56890.	114754.	236333.	347867.	528812.	695315.	891768.	1122617.
10	32549.	43451.	61929.	123801.	252113.	368556.	555769.	726719.	927102.	1161217.

STATION : 8033000 NECHES RIVER NEAR DIBOLL, TEX
LOCATION : LATITUDE N31:07:58, LONGITUDE W094:48:35
DRAINAGE AREA : 2724.00 mi2 (7056. km2)
PERIOD OF RECORD: 10/1923 - 09/1985
GAGE ALTITUDE : 134.46 (40.98 m)
TOTAL PERIOD OF RECORD: 49 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8033000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22872.66	19439.40	0.38E+09	1.817	3.66
2	43980.03	37327.86	0.14E+10	1.794	3.45
3	63286.90	54377.89	0.30E+10	1.882	3.75
4	80945.27	69066.20	0.48E+10	1.826	3.38
5	96923.63	81778.50	0.67E+10	1.735	2.87
6	111310.91	93106.45	0.87E+10	1.680	2.57
7	124795.01	103966.34	0.11E+11	1.671	2.50
8	137686.39	114538.01	0.13E+11	1.693	2.60
9	149806.89	124655.93	0.16E+11	1.723	2.74
10	161176.52	133929.08	0.18E+11	1.744	2.83

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3437.	4996.	7731.	16889.	34578.	49004.	69792.	86816.	104892.	124151.
2	6710.	9710.	14955.	32477.	66331.	94011.	134030.	166919.	201959.	239410.
3	9914.	14216.	21693.	46595.	94887.	134682.	192744.	240906.	292663.	348416.
4	12882.	18404.	27976.	59742.	121192.	171799.	245660.	306967.	372907.	443997.
5	15637.	22281.	33769.	71765.	145027.	205258.	293084.	365945.	444293.	528747.
6	18206.	25875.	39100.	82690.	166429.	235128.	335175.	418101.	507227.	603255.
7	20643.	29279.	44139.	92964.	186436.	262951.	374219.	466344.	565282.	671813.
8	22997.	32566.	49004.	102847.	205542.	289379.	411051.	511621.	619493.	735511.
9	25247.	35686.	53588.	112088.	223407.	314172.	445810.	554574.	671213.	796640.
10	27425.	38699.	57998.	120885.	240161.	337199.	477717.	593675.	717919.	851419.

```
STATION          : 08033500      NECHES RIVER NEAR ROCKLAND, TEX.
LOCATION         : LATITUDE N31:01:29, LONGITUDE WO94:23:55
DRAINAGE AREA    : 3636.00 mi2 (9419. km2)
PERIOD OF RECORD: 07/1903  - 09/1990
GAGE ALTITUDE    : 88.41 (26.94 m)
TOTAL PERIOD OF RECORD:  58 YRS.
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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8033500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	33783.64	23618.39	0.56E+09	0.923	-0.23
2	66160.73	45935.83	0.21E+10	0.926	-0.20
3	96875.48	66829.28	0.45E+10	0.939	-0.12
4	125553.38	85748.81	0.74E+10	0.945	-0.06
5	152304.23	102706.59	0.11E+11	0.941	-0.03
6	177098.36	118231.84	0.14E+11	0.945	0.05
7	200080.95	132385.30	0.18E+11	0.942	0.09
8	221452.86	145407.63	0.21E+11	0.950	0.15
9	241601.80	157609.66	0.25E+11	0.959	0.22
10	260552.53	169018.44	0.29E+11	0.973	0.31

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	6823.	9445.	13794.	27106.	50185.	67631.	91426.	110058.	129190.	148981.
2	13400.	18594.	27202.	53423.	98380.	131979.	177320.	212467.	248242.	284959.
3	19771.	27441.	40132.	78614.	144052.	192580.	257616.	307708.	358419.	410211.
4	25883.	35955.	52585.	102666.	186724.	248277.	329836.	391992.	454350.	517517.
5	31663.	44088.	64533.	125660.	226612.	299370.	394415.	465915.	536946.	608098.
6	36828.	51523.	75647.	147372.	263893.	346424.	452504.	531108.	608307.	684601.
7	41631.	58458.	86034.	167651.	298491.	389856.	505741.	590549.	673054.	753676.
8	46447.	65248.	95984.	186522.	330279.	429743.	554877.	645769.	733694.	819047.
9	51095.	71753.	105450.	204308.	360136.	467234.	601197.	697994.	791262.	881392.
10	55427.	77884.	114442.	221280.	388300.	502165.	643560.	745039.	842321.	935761.

STATION : 08034500   MUD CR NR JACKSONVILLE,TEX(DISC)
LOCATION : LATITUDE N31:58:35, LONGITUDE W095:09:38
DRAINAGE AREA : 376.00 mi2 (974.0 km2)
PERIOD OF RECORD: 06/1939 - 09/1979
GAGE ALTITUDE : 271.64 (82.79 m)
TOTAL PERIOD OF RECORD: 9 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8034500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13086.50	11054.65	0.12E+09	1.398	-0.45
2	23898.85	20931.32	0.44E+09	1.471	-0.33
3	31581.49	25535.91	0.65E+09	1.121	-0.96
4	36319.78	27761.07	0.77E+09	0.963	-1.21
5	40174.55	29317.62	0.86E+09	0.875	-1.30
6	42817.42	30399.29	0.92E+09	0.850	-1.33
7	44876.26	31197.99	0.97E+09	0.833	-1.33
8	46582.05	31824.29	0.10E+10	0.805	-1.34
9	47897.96	32345.30	0.10E+10	0.775	-1.36
10	49062.27	32771.83	0.11E+10	0.739	-1.37

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2162.	3038.	4556.	9677.	20019.	28952.	42584.	54401.	67587.	82310.
2	3793.	5329.	8009.	17231.	36474.	53611.	80460.	104308.	131454.	162356.
3	5293.	7454.	11188.	23680.	48514.	69631.	101418.	128608.	158622.	191784.
4	6600.	9212.	13654.	28088.	55609.	78220.	111326.	138952.	168856.	201290.
5	7859.	10859.	15891.	31829.	61186.	84666.	118325.	145907.	175339.	206854.
6	9010.	12248.	17608.	34299.	64614.	88729.	123258.	151574.	181845.	214324.
7	9879.	13311.	18946.	36279.	67355.	91888.	126844.	155416.	185894.	218541.
8	10553.	14146.	20013.	37914.	69698.	94629.	129994.	158799.	189448.	222206.
9	10939.	14668.	20745.	39191.	71667.	96936.	132534.	161341.	191831.	224252.
10	11196.	15062.	21357.	40381.	73520.	99019.	134576.	163071.	192982.	224544.

STATION   : 08037000   ANGELINA RIVER NR LUFKIN,TEX(DISC)
LOCATION   : LATITUDE N31:27:26, LONGITUDE W094:43:34
DRAINAGE AREA   : 1600.00 mi2 (4145. km2)
PERIOD OF RECORD: 10/1923 - 09/1979
GAGE ALTITUDE   : 164.72 (50.20 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8037000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	20973.91	18364.82	0.34E+09	1.414	0.79
2	40667.38	35638.45	0.13E+10	1.363	0.55
3	58262.49	50483.44	0.25E+10	1.315	0.38
4	74239.62	63497.83	0.40E+10	1.249	0.14
5	88935.23	75738.96	0.57E+10	1.213	0.01
6	101862.59	85752.32	0.74E+10	1.167	-0.12
7	114290.06	95951.80	0.92E+10	1.152	-0.17
8	125576.78	104600.30	0.11E+11	1.136	-0.22
9	136402.98	112655.66	0.13E+11	1.123	-0.25
10	146432.86	119642.79	0.14E+11	1.106	-0.27

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	946.	2384.	5958.	19540.	34951.	40069.	42983.	43912.	44341.	44542.
2	1850.	4634.	11526.	37721.	67746.	77880.	83728.	85628.	86513.	86936.
3	2655.	6713.	16788.	54711.	96707.	110224.	117721.	120035.	121077.	121549.
4	3460.	8717.	21701.	70123.	123012.	139789.	148989.	151786.	153032.	153587.
5	4163.	10494.	26125.	84227.	147179.	166936.	177672.	180895.	182317.	182940.
6	4823.	12156.	30229.	97001.	168436.	190497.	202320.	205801.	207314.	207960.
7	5479.	13738.	34009.	108734.	188993.	214001.	227521.	231553.	233324.	234093.
8	6175.	15378.	37817.	119852.	207393.	234577.	249250.	253619.	255535.	256366.
9	6815.	16968.	41653.	131090.	224763.	253163.	268176.	272513.	274373.	275146.
10	7425.	18505.	45388.	141861.	240727.	269899.	284954.	289189.	290951.	291664.

STATION   : 8038000   ATTOYAC BAYOU NR CHIRENO, TEX
LOCATION   : LATITUDE N31:30:15, LONGITUDE WO94:18:15
DRAINAGE AREA   : 503.00 mi2 (1303. km2)
PERIOD OF RECORD: 02/1924 - 09/1985
GAGE ALTITUDE   : 169.58 (51.68 m)
TOTAL PERIOD OF RECORD: 47 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8038000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13826.14	12007.06	0.14E+09	1.300	1.27
2	25511.11	22325.31	0.50E+09	1.380	1.71
.3	33675.07	28639.68	0.82E+09	1.383	1.78
4	39685.21	32201.13	0.10E+10	1.252	1.28
5	44294.88	34280.10	0.12E+10	1.135	0.89
6	48276.60	35973.91	0.13E+10	1.042	0.56
7	52217.04	37847.91	0.14E+10	0.962	0.25
8	55714.90	39299.69	0.15E+10	0.877	0.01
9	58780.80	40469.19	0.16E+10	0.802	-0.16
10	61289.55	41390.46	0.17E+10	0.733	-0.30

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1599.	2420.	3931.	9444.	21302.	31774.	47813.	61638.	76912.	93772.
2	3149.	4670.	7433.	17401.	38869.	58028.	87789.	113827.	143003.	175634.
3	4646.	6746.	10486.	23582.	50940.	74928.	111784.	143787.	179480.	219252.
4	6044.	8647.	13199.	28674.	59836.	86440.	126502.	160710.	198380.	239870.
5	7334.	10382.	15636.	33000.	66644.	94512.	135474.	169728.	206829.	247083.
6	8537.	11985.	17854.	36817.	72439.	101233.	142745.	176882.	213367.	252484.
7	9593.	13420.	19888.	40474.	78274.	108250.	150783.	185269.	221705.	260367.
8	10529.	14707.	21732.	43807.	83515.	114439.	157640.	192181.	228251.	266128.
9	11310.	15813.	23359.	46818.	88200.	119836.	163306.	197537.	232825.	269451.
10	11932.	16698.	24667.	49263.	92051.	124328.	168150.	202275.	237119.	272977.

STATION   : 08038500   ANGELINA RIVER NR ZAVALLA, TEX.(DISC)
LOCATION   : LATITUDE N31:12:41, LONGITUDE W094:17:40
DRAINAGE AREA   : 2892.00 mi2 (7492. km2)
PERIOD OF RECORD: 10/1951   - 01/1965
GAGE ALTITUDE   : 104.48 (31.84 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8038500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	25872.10	21217.89	0.45E+09	1.390	-0.26
2	50934.02	41993.24	0.18E+10	1.375	-0.28
3	75234.59	62269.05	0.39E+10	1.360	-0.28
4	97617.30	80077.80	0.64E+10	1.331	-0.33
5	118703.13	96404.63	0.93E+10	1.293	-0.42
6	138489.02	111024.48	0.12E+11	1.263	-0.48
7	157350.30	125007.22	0.16E+11	1.241	-0.53
8	175630.27	138516.06	0.19E+11	1.226	-0.55
9	193332.00	151568.36	0.23E+11	1.210	-0.57
10	209848.19	163569.75	0.27E+11	1.194	-0.59

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	6442.	7917.	10362.	18503.	36096.	53118.	82562.	111559.	147891.	193212.
2	12191.	15144.	20049.	36390.	71562.	105428.	163499.	220301.	290950.	378508.
3	17349.	21777.	29149.	53736.	106433.	156898.	242650.	325916.	428686.	555183.
4	22168.	28053.	37841.	70297.	138922.	203687.	312277.	416170.	542992.	697225.
5	26773.	34063.	46170.	86120.	169636.	247517.	376687.	498824.	646608.	824632.
6	31616.	40220.	54473.	101235.	198081.	287643.	435138.	573633.	740326.	940046.
7	36269.	46116.	62398.	115607.	225120.	325851.	490984.	645364.	830556.	1051692.
8	40618.	51702.	70004.	129620.	251572.	363086.	544964.	714097.	916183.	1156486.
9	44797.	57077.	77337.	143172.	277218.	399236.	597451.	781011.	999653.	1258788.
10	48776.	62176.	84265.	155880.	301107.	432799.	646021.	842814.	1076624.	1353002.

STATION   : 08039500   ANGELINA RIVER AT HORGER, TEX.(DISC)
LOCATION   : LATITUDE N31:02:08, LONGITUDE W094:07:48
DRAINAGE AREA   : 3486.00 mi2 (9031. km2)
PERIOD OF RECORD: 04/1928 - 09/1973
GAGE ALTITUDE   : 68.54 (20.89 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8039500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	40583.55	24863.73	0.62E+09	0.927	-0.38
2	80352.14	49443.83	0.24E+10	0.941	-0.32
3	118330.45	72433.78	0.52E+10	0.932	-0.32
4	154126.94	94075.52	0.89E+10	0.959	-0.23
5	188335.77	113990.87	0.13E+11	0.932	-0.27
6	220512.88	132377.11	0.18E+11	0.913	-0.29
7	250620.20	149312.52	0.22E+11	0.901	-0.29
8	279201.19	165224.05	0.27E+11	0.889	-0.31
9	306609.31	179643.20	0.32E+11	0.874	-0.32
10	332528.94	192645.33	0.37E+11	0.862	-0.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	11705.	14920.	19931.	34210.	57746.	75397.	99722.	119137.	139516.	161066.
2	22786.	29207.	39234.	67799.	114695.	149641.	197506.	235458.	275078.	316739.
3	33451.	43002.	57906.	100213.	169129.	220040.	289240.	343694.	400185.	459218.
4	43715.	56234.	75741.	130924.	220261.	285856.	374559.	444013.	515776.	590476.
5	53218.	68713.	92845.	160783.	269586.	348556.	454234.	536149.	620070.	706730.
6	62262.	80609.	109161.	189156.	315939.	406995.	527678.	620388.	714635.	811292.
7	70687.	91773.	124568.	216008.	359413.	461300.	595009.	696774.	799397.	903897.
8	78943.	102597.	139350.	241454.	400450.	512634.	658942.	769655.	880751.	993384.
9	87438.	113590.	154141.	266238.	439396.	560696.	717927.	836250.	954432.	1073759.
10	96195.	124690.	168740.	289861.	475627.	605041.	772079.	897323.	1022057.	1147680.

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STATION   : 08041000   NECHES RIVER AT EVADALE, TEX.
LOCATION   : LATITUDE N30:21:20, LONGITUDE W094:05:35
DRAINAGE AREA   : 7951.00 mi2 (20598 km2)
PERIOD OF RECORD : 08/1904 - 09/1990
GAGE ALTITUDE   : 8.25 (2.514 m)
TOTAL PERIOD OF RECORD : 33 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8041000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	73541.71	45296.57	0.21E+10	0.858	-0.56
2	146380.22	89874.87	0.81E+10	0.837	-0.61
3	217538.75	132812.36	0.18E+11	0.824	-0.64
4	287111.69	175017.83	0.31E+11	0.823	-0.63
5	354140.34	214750.94	0.46E+11	0.814	-0.62
6	418102.56	251866.83	0.63E+11	0.805	-0.61
7	480251.91	288428.06	0.83E+11	0.804	-0.58
8	539308.94	321672.22	0.10E+12	0.799	-0.57
9	596037.25	353001.91	0.12E+12	0.784	-0.58
10	650461.94	382505.22	0.15E+12	0.766	-0.59

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0	0.5
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5	1.0
DURATION (DAYS)											
1	21319.	26986.	35840.	61306.	104102.	136872.	182858.	220221.	260017.	302708.	
2	42297.	53636.	71347.	122217.	207414.	272401.	363284.	436873.	515037.	598651.	
3	62899.	79871.	106351.	182171.	308418.	404147.	537346.	644671.	758213.	879200.	
4	82635.	105184.	140360.	240894.	407548.	533264.	707385.	847036.	994214.	1150451.	
5	101533.	129644.	173468.	298249.	503449.	656882.	867754.	1035584.	1211349.	1396772.	
6	119146.	152818.	205272.	353902.	595662.	774223.	1016980.	1208102.	1406481.	1613918.	
7	136031.	175082.	235910.	407784.	685390.	888726.	1163114.	1377513.	1598668.	1828484.	
8	152530.	196901.	265963.	460144.	770509.	995396.	1295916.	1528571.	1766675.	2012331.	
9	167650.	217353.	294712.	511169.	853091.	1097773.	1420960.	1668431.	1919288.	2175916.	
10	181778.	236773.	322388.	560802.	932836.	1195567.	1538294.	1797637.	2057818.	2321545.	

STATION   : 8041500   VILLAGE CREEK NEAR KOUNTZE, TEX
LOCATION   : LATITUDE N30:23:52, LONGITUDE W094:15:48
DRAINAGE AREA   :   860.00 mi2 (2227.   km2)
PERIOD OF RECORD: 06/1924 - 09/1990
GAGE ALTITUDE : 25.12 (7.656   m)
TOTAL PERIOD OF RECORD: 56 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8041500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	25655.53	26878.43	0.72E+09	2.052	3.41
2	47217.77	47513.83	0.23E+10	1.979	3.24
3	63765.00	61423.45	0.38E+10	1.905	2.92
4	76172.55	69807.34	0.49E+10	1.820	2.58
5	85067.16	74617.86	0.56E+10	1.764	2.39
6	92142.88	77548.88	0.60E+10	1.677	2.07
7	98181.30	80089.00	0.64E+10	1.597	1.78
8	103498.67	82389.19	0.68E+10	1.521	1.50
9	108219.93	84677.29	0.72E+10	1.471	1.32
10	112652.73	86502.50	0.75E+10	1.422	1.16

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3520.	4931.	7435.	16448.	36757.	56201.	88662.	119212.	155742.	199260.
2	6735.	9446.	14232.	31174.	68254.	102777.	158973.	210703.	271320.	342288.
3	9693.	13567.	20329.	43662.	92713.	136772.	206347.	268634.	339999.	421766.
4	12204.	17149.	25693.	54353.	111671.	160742.	235063.	299027.	369993.	448796.
5	14334.	20172.	30166.	62839.	125332.	176625.	251524.	313821.	381025.	453682.
6	16123.	22739.	33987.	69998.	136272.	188740.	262931.	322847.	385893.	452544.
7	17534.	24809.	37137.	76053.	145691.	199323.	273278.	331625.	391801.	454280.
8	18713.	26563.	39841.	81333.	154008.	208780.	282806.	340116.	398262.	457750.
9	19755.	28117.	42212.	85940.	161259.	217094.	291441.	348220.	405234.	462884.
10	20774.	29657.	44575.	90492.	168114.	224590.	298527.	354119.	409284.	464310.

STATION : 8041700   PINE ISLAND BAYOU NR SOUR LAKE, TEX
LOCATION : LATITUDE N30:06:21, LONGITUDE W094:20:04
DRAINAGE AREA : 336.00 mi2 (870.4 km2)
PERIOD OF RECORD: 10/1967 - 09/1990
GAGE ALTITUDE : 0.00 (0.000 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8041700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12281.66	11837.95	0.14E+09	2.176	2.93
2	23855.47	22938.25	0.53E+09	2.199	2.99
3	34385.54	32575.54	0.11E+10	2.197	3.04
4	43169.56	39533.30	0.16E+10	2.143	2.88
5	50813.77	45381.34	0.21E+10	2.127	2.85
6	57066.37	49165.36	0.24E+10	2.090	2.78
7	62462.97	51966.22	0.27E+10	2.035	2.61
8	67485.88	54554.51	0.30E+10	1.975	2.39
9	71915.84	56348.36	0.32E+10	1.908	2.19
10	75857.94	57769.95	0.33E+10	1.857	2.05

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	2636.	3314.	4455.	8336.	16936.	25402.	40174.	54842.	73299.	96428.
2	5237.	6552.	8758.	16246.	32802.	49089.	77538.	105809.	141431.	186116.
3	7741.	9654.	12852.	23638.	47282.	70384.	110516.	150208.	200033.	262316.
4	10127.	12586.	16669.	30262.	59471.	87554.	135637.	182607.	240958.	313196.
5	12386.	15324.	20175.	36156.	69984.	102126.	156610.	209378.	274479.	354553.
6	14466.	17857.	23416.	41453.	78750.	113509.	171374.	226568.	293778.	375455.
7	16311.	20135.	26359.	46258.	86429.	123102.	183021.	239211.	306692.	387607.
8	17984.	22221.	29077.	50734.	93599.	132045.	193918.	251078.	318950.	399392.
9	19564.	24194.	31643.	54887.	99967.	139665.	202575.	259803.	326972.	405635.
10	21150.	26133.	34106.	58694.	105507.	146073.	209497.	266438.	332613.	409336.

STATION   : O8042800   WEST FORK TRINITY RIVER NR JACKSBORO, TX
LOCATION   : LATITUDE N33:17:36, LONGITUDE WO98:04:43
DRAINAGE AREA   : 683.OO mi2 (1769. km2)
PERIOD OF RECORD: O3/1956 - O9/1990
GAGE ALTITUDE   : 869.28 (264.9 m)
TOTAL PERIOD OF RECORD: 18 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8042800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10768.49	14703.66	0.22E+09	2.409	3.30
2	18471.63	24168.57	0.58E+09	2.360	3.07
3	24187.88	31427.15	0.99E+09	2.500	3.71
4	28462.26	37747.38	0.14E+10	2.769	4.94
5	31455.43	42124.21	0.18E+10	2.927	5.67
6	33340.94	44655.87	0.20E+10	2.965	5.86
7	34651.13	46233.27	0.21E+10	2.922	5.66
8	36106.94	48159.27	0.23E+10	2.837	5.23
9	37270.92	49686.09	0.25E+10	2.811	5.09
10	38292.39	50857.39	0.26E+10	2.811	5.08

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1582.	1919.	2540.	5105.	12976.	23362.	47503.	78594.	127540.	204229.
2	3057.	3663.	4772.	9253.	22539.	39584.	78209.	126875.	202114.	317991.
3	4394.	5187.	6637.	12444.	29413.	50984.	99469.	160288.	254001.	397907.
4	5294.	6240.	7963.	14817.	34618.	59538.	115033.	184053.	289640.	450649.
5	5820.	6902.	8862.	16583.	38565.	65813.	125630.	198922.	309612.	476269.
6	6116.	7283.	9392.	17666.	41077.	69907.	132782.	209303.	324186.	496088.
7	6209.	7442.	9667.	18371.	42917.	73027.	138369.	217512.	335775.	511739.
8	6209.	7501.	9836.	18987.	44878.	76689.	145711.	229273.	354004.	539189.
9	6232.	7587.	10035.	19610.	46595.	79591.	150734.	236345.	363384.	550665.
10	6280.	7707.	10279.	20292.	48265.	82143.	154393.	240453.	366946.	551416.

STATION : 8043500   W FK TRINITY R AT BRIDGEPORT, TEX (DISC)
LOCATION   : LATITUDE N33:12:05, LONGITUDE WO97:45:21
DRAINAGE AREA   :   1147.00 mi2 (2971. km2)
PERIOD OF RECORD: 09/1908 - 02/1930
GAGE ALTITUDE : 721.00 (219.7 m)
TOTAL PERIOD OF RECORD: 21 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8043500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14031.64	8647.83	0.75E+08	1.282	0.76
2	24187.02	16553.04	0.27E+09	1.678	1.74
3	31869.75	23377.41	0.55E+09	1.682	1.54
4	38210.16	29740.18	0.88E+09	1.735	1.61
5	43129.07	34554.41	0.12E+10	1.793	1.84
6	46871.31	38543.13	0.15E+10	1.860	2.14
7	48931.00	39581.61	0.16E+10	1.795	1.98
8	50735.21	40297.23	0.16E+10	1.725	1.82
9	52280.05	41133.57	0.17E+10	1.629	1.50
10	53692.09	41731.45	0.17E+10	1.554	1.28

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4563.	5578.	7149.	11678.	19467.	25652.	34649.	42207.	50539.	59729.
2	7491.	9147.	11746.	19486.	33497.	45152.	62784.	78145.	95592.	115373.
3	9285.	11344.	14630.	24757.	44132.	61052.	87707.	111877.	140160.	173223.
4	10270.	12684.	16589.	28897.	53187.	74918.	109819.	141999.	180152.	225303.
5	10950.	13690.	18147.	32307.	60419.	85603.	126050.	163242.	207274.	259237.
6	11223.	14220.	19125.	34826.	66128.	94145.	139038.	180105.	228559.	285465.
7	11430.	14660.	19947.	36759.	69658.	98471.	143712.	184250.	231257.	285544.
8	11642.	15084.	20723.	38529.	72775.	102163.	147415.	187270.	232695.	284428.
9	11810.	15386.	21255.	39787.	75299.	105595.	151959.	192567.	238577.	290731.
10	12026.	15743.	21848.	41073.	77628.	108515.	155346.	196026.	241733.	293199.

STATION   : 08044000   BIG SANDY CREEK NR BRIDGEPORT, TX
LOCATION   : LATITUDE N33:13:54, LONGITUDE W097:41:40
DRAINAGE AREA   : 333.00 mi2 (862.6 km2)
PERIOD OF RECORD: 10/1936 - 09/1990
GAGE ALTITUDE   : 724.44 (220.8 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8044000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
•1	8017.19	10205.63	0.10E+09	2.350	2.76
2	12530.11	15593.56	0.24E+09	2.400	3.16
3	14180.25	17072.78	0.29E+09	2.342	2.97
4	15119.79	17640.08	0.31E+09	2.258	2.68
5	16463.71	19263.64	0.37E+09	2.152	2.35
6	17890.20	22242.91	0.49E+09	2.288	2.89
7	18641.99	24017.77	0.58E+09	2.424	3.49
8	19015.27	24709.61	0.61E+09	2.478	3.74
9	19320.34	24813.17	0.62E+09	2.478	3.76
10	19555.20	24867.37	0.62E+09	2.467	3.74

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	745.	1099.	1766.	4446.	11417.	18850.	32372.	46046.	63364.	85092.
2	1239.	1805.	2864.	7066.	17877.	29357.	50221.	71316.	98072.	131675.
3	1387.	2052.	3302.	8235.	20622.	33378.	55840.	77913.	105134.	138511.
4	1447.	2178.	3559.	8989.	22357.	35762.	58746.	80747.	107255.	139037.
5	1538.	2309.	3772.	9591.	24218.	39182.	65306.	90738.	121811.	159574.
6	1651.	2432.	3908.	9875.	25547.	42415.	73376.	104929.	145171.	195974.
7	1686.	2470.	3957.	10017.	26266.	44135.	77622.	112385.	157496.	215314.
8	1699.	2495.	4006.	10183.	26778.	45040.	79265.	114792.	160874.	219921.
9	1726.	2554.	4127.	10527.	27463.	45779.	79507.	113970.	157996.	213668.
10	1729.	2577.	4193.	10764.	28015.	46465.	80038.	113972.	156857.	210583.

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STATION                : 08045500          W F TRINITY R AT LK WORTH D AB FT WORTH,TX(DISC)
LOCATION               : LATITUDE N32:47:27, LONGITUDE W097:24:54
DRAINAGE AREA          :  2069.00 mi2 (5360.  km2)
PERIOD OF RECORD: 06/1917 - 09/1934
GAGE ALTITUDE   :  594.30 (181.1  m)
TOTAL PERIOD OF RECORD:  10 YRS.
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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8045500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9566.28	3221.01	0.10E+08	0.334	-1.51
2	17992.07	5896.24	0.35E+08	0.264	-1.68
3	25507.44	8454.06	0.71E+08	0.342	-1.62
4	32520.99	10925.90	0.12E+09	0.383	-1.67
5	38689.59	12932.35	0.17E+09	0.291	-1.82
6	44136.20	14932.54	0.22E+09	0.221	-1.90
7	49229.76	16533.44	0.27E+09	0.160	-1.94
8	54283.64	17624.59	0.31E+09	0.083	-1.94
9	58639.34	18713.85	0.35E+09	-.011	-1.91
10	62633.46	20116.22	0.40E+09	-.060	-1.84

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5117.	5823.	6801.	9112.	12144.	14080.	16460.	18191.	19889.	21579.
2	9788.	11103.	12917.	17181.	22733.	26257.	30572.	33700.	36759.	39797.
3	13939.	15751.	18267.	24254.	32203.	37344.	43731.	48427.	53070.	57729.
4	17888.	20109.	23214.	30733.	40992.	47805.	56456.	62931.	69452.	76080.
5	21253.	23909.	27617.	36585.	48788.	56872.	67114.	74768.	82461.	90272.
6	23889.	26975.	31289.	41718.	55887.	65248.	77078.	85900.	94743.	103707.
7	26521.	30038.	34937.	46678.	62413.	72669.	85485.	94953.	104356.	113822.
8	29457.	33458.	38972.	51893.	68637.	79218.	92126.	101450.	110542.	119544.
9	31547.	36082.	42275.	56482.	74256.	85106.	97978.	107026.	115661.	124032.
10	33043.	38090.	44969.	60577.	79677.	91078.	104337.	113484.	122071.	130281.

STATION : 08047500 CLEAR FORK TRINITY RIVER AT FORT WORTH, TX
LOCATION : LATITUDE N32:43:56, LONGITUDE W097:21:31
DRAINAGE AREA : 518.00 mi2 (1341. km2)
PERIOD OF RECORD: 03/1924 - 09/1990
GAGE ALTITUDE : 532.91 (162.4 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8047500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	11916.70	15914.06	0.25E+09	3.621	11.89
2	15850.95	17825.32	0.32E+09	2.741	7.16
3	17505.57	18949.58	0.36E+09	2.405	5.31
4	19219.50	19632.92	0.39E+09	2.190	4.30
5	20647.60	21002.75	0.44E+09	1.981	3.01
6	21887.13	22491.36	0.51E+09	1.895	2.34
7	22661.51	23102.28	0.53E+09	1.895	2.33
8	23383.70	23599.36	0.56E+09	1.878	2.27
9	24180.15	24445.44	0.60E+09	1.894	2.26
10	25183.19	26296.06	0.69E+09	2.089	3.14

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1028.	1613.	2740.	7158.	17532.	27281.	42929.	56945.	72888.	90951.
2	1508.	2366.	3997.	10201.	24010.	36375.	55378.	71742.	89751.	109550.
3	1634.	2591.	4423.	11401.	26772.	40325.	60808.	78156.	96962.	117351.
4	1776.	2892.	5038.	13123.	30000.	43972.	63806.	79634.	95993.	112818.
5	1995.	3171.	5414.	13841.	31904.	47410.	70281.	89221.	109373.	130828.
6	2191.	3411.	5715.	14375.	33409.	50315.	76161.	98329.	122657.	149339.
7	2428.	3714.	6109.	14978.	34354.	51616.	78193.	101182.	126631.	154769.
8	2606.	3947.	6427.	15535.	35355.	53032.	80338.	104054.	130420.	159689.
9	2755.	4143.	6696.	16044.	36434.	54723.	83169.	108048.	135887.	166978.
10	2913.	4332.	6930.	16465.	37566.	56853.	87429.	114680.	145679.	180848.

STATION   : 08048000   WEST FORK TRINITY RIVER AT FORT WORTH, TX
LOCATION   : LATITUDE N32:45:39, LONGITUDE W097:19:56
DRAINAGE AREA   : 2615.00 mi2 (6774. km2)
PERIOD OF RECORD   : 10/1920 - 09/1990
GAGE ALTITUDE   : 519.24 (158.2 m)
TOTAL PERIOD OF RECORD: 11 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8048000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19650.79	25514.26	0.65E+09	2.924	3.52
2	33179.87	40097.74	0.16E+10	2.768	3.10
3	41982.87	45892.57	0.21E+10	2.601	2.63
4	49662.51	48671.89	0.24E+10	2.400	2.06
5	56857.10	52451.45	0.28E+10	2.292	1.75
6	63530.58	56591.95	0.32E+10	2.262	1.65
7	69901.13	59591.03	0.36E+10	2.228	1.53
8	76251.85	61802.07	0.38E+10	2.222	1.50
9	81975.07	63596.97	0.40E+10	2.224	1.51
10	86279.92	64822.41	0.42E+10	2.225	1.56

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5008.	5545.	6568.	10794.	23278.	39339.	75990.	123043.	197188.	313997.
2	8704.	9700.	11556.	19021.	40299.	66848.	125609.	198899.	311483.	484377.
3	12251.	13587.	16046.	25678.	51927.	83358.	150230.	230658.	350420.	528766.
4	15663.	17425.	20584.	32444.	62830.	97297.	166939.	246764.	360813.	523731.
5	19085.	21136.	24791.	38330.	72189.	109753.	184090.	267692.	385230.	550512.
6	22392.	24655.	28695.	43603.	80511.	121036.	200456.	288998.	412575.	585164.
7	26333.	28727.	33029.	48948.	88100.	130713.	213511.	305126.	432191.	608675.
8	30907.	33383.	37881.	54609.	95475.	139485.	224094.	316818.	444392.	620299.
9	35066.	37636.	42332.	59816.	102173.	147297.	233130.	326279.	453397.	627253.
10	37618.	40406.	45448.	63939.	107847.	153841.	239953.	332036.	456107.	623722.

```
STATION               : 08053500    DENTON CREEK NR JUSTIN, TX
LOCATION              : LATITUDE N33:07:08, LONGITUDE W097:17:25
DRAINAGE AREA         : 400.00 mi2 (1036.  km2)
PERIOD OF RECORD: 10/1949  - 09/1990
GAGE ALTITUDE         : 606.66 (184.9  m)
TOTAL PERIOD OF RECORD:   14 YRS.
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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8053500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8823.05	10242.75	0.10E+09	1.396	0.09
2	14454.26	17671.59	0.31E+09	1.498	0.15
3	17894.59	22299.62	0.50E+09	1.566	0.28
4	19948.48	25101.30	0.63E+09	1.595	0.31
5	21359.72	26701.52	0.71E+09	1.613	0.36
6	22235.24	27786.96	0.77E+09	1.607	0.31
7	22750.29	28289.38	0.80E+09	1.612	0.30
8	23224.34	28840.92	0.83E+09	1.622	0.33
9	23890.74	29333.75	0.86E+09	1.621	0.36
10	24321.90	29664.95	0.88E+09	1.619	0.37

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	456.	725.	1285.	3978.	12864.	24214.	48202.	75706.	114285.	167400.
2	696.	1102.	1951.	6122.	20494.	39632.	81742.	131774.	204262.	307024.
3	881.	1381.	2421.	7511.	25080.	48618.	100805.	163383.	254731.	385326.
4	967.	1521.	2676.	8339.	27918.	54151.	112283.	181910.	283453.	428448.
5	1006.	1607.	2870.	9086.	30347.	58337.	119137.	190515.	292711.	436056.
6	1028.	1654.	2974.	9487.	31731.	60873.	123790.	197222.	301720.	447503.
7	1084.	1741.	3120.	9869.	32607.	62063.	125011.	197841.	300698.	443212.
8	1109.	1782.	3199.	10121.	33371.	63375.	127248.	200888.	304543.	447734.
9	1123.	1826.	3312.	10585.	34785.	65564.	130023.	203221.	304710.	443045.
10	1147.	1871.	3404.	10887.	35620.	66830.	131663.	204745.	305364.	441663.

STATION : 8054000
LOCATION : LATITUDE N33:02:24, LONGITUDE W097:12:17
DRAINAGE AREA : 621.00 mi2 (1608. km2)
PERIOD OF RECORD: 10/1923 - 09/1955
GAGE ALTITUDE : 523.55 (159.5 m)
TOTAL PERIOD OF RECORD: 22 YRS.

DENTON CREEK NR ROANOKE, TEX (DISC)

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8054000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13506.27	12223.63	0.15E+09	1.766	1.76
2	19357.87	17338.90	0.30E+09	1.772	1.74
3	23737.10	21237.64	0.45E+09	1.836	1.96
4	25829.21	22574.10	0.51E+09	1.721	1.71
5	27023.79	23543.08	0.55E+09	1.714	1.70
6	29506.61	28935.23	0.84E+09	2.188	3.29
7	31563.45	32491.23	0.11E+10	2.299	3.66
8	32690.16	34100.71	0.12E+10	2.281	3.48
9	33414.14	35028.16	0.12E+10	2.265	3.41
10	34520.50	35678.51	0.13E+10	2.212	3.28

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2074.	2929.	4423.	9549.	20145.	29473.	43932.	56638.	70971.	87141.
2	2944.	4193.	6377.	13838.	29040.	42195.	62252.	79590.	98879.	120343.
3	3583.	5150.	7895.	17200.	35768.	51453.	74832.	94599.	116178.	139758.
4	3736.	5460.	8507.	18875.	39351.	56353.	81213.	101833.	123955.	147743.
5	3832.	5648.	8873.	19850.	41355.	59003.	84488.	105366.	127515.	151090.
6	3910.	5736.	9007.	20510.	44483.	65355.	97153.	124519.	154792.	188260.
7	3969.	5833.	9201.	21284.	47294.	70603.	107010.	139061.	175182.	215818.
8	4086.	5984.	9415.	21792.	48760.	73249.	111963.	146450.	185699.	230285.
9	4106.	6026.	9507.	22130.	49836.	75136.	115314.	151246.	192266.	238998.
10	4096.	6092.	9736.	23004.	51968.	78102.	119065.	155187.	195922.	241747.

STATION   : 08055500   ELM FORK TRINITY RIVER NR CARROLLTON, TX
LOCATION   : LATITUDE N32:57:57, LONGITUDE WO96:56:39
DRAINAGE AREA   : 2459.00 mi2 (6370. km2)
PERIOD OF RECORD: 01/1907 - 09/1990
GAGE ALTITUDE   : 433.40 (132.1 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8055500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	39976.10	44375.42	0.20E+10	1.898	0.54
.2	68708.97	73531.77	0.54E+10	1.972	0.85
3	84627.09	87065.49	0.76E+10	1.952	0.91
4	96137.95	93876.20	0.88E+10	1.886	0.79
5	105900.42	99882.92	0.10E+11	1.825	0.69
6	114268.84	104865.06	0.11E+11	1.821	0.78
7	121942.13	110282.95	0.12E+11	1.847	0.95
8	129256.57	114461.05	0.13E+11	1.794	0.91
9	135748.31	117301.65	0.14E+11	1.735	0.83
10	141093.91	119875.02	0.14E+11	1.707	0.81

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	8643.	10138.	12813.	23078.	51069.	84509.	155480.	239879.	364198.	546901.
2	15977.	18657.	23409.	41288.	88513.	143365.	256817.	388582.	578849.	853129.
3	20023.	23559.	29757.	52538.	110724.	176287.	307903.	456619.	666242.	960818.
4	23720.	28000.	35413.	62000.	127404.	198692.	337289.	489438.	698590.	984921.
5	25840.	30930.	39633.	70179.	142708.	219181.	363083.	516268.	721321.	994172.
6	28173.	33939.	43694.	77402.	155342.	235522.	383025.	536614.	738537.	1002372.
7	29627.	36088.	46928.	83938.	167520.	251514.	402676.	556611.	755375.	1010314.
8	30347.	37582.	49665.	90413.	180024.	267917.	421562.	574282.	767001.	1009034.
9	31201.	39177.	52453.	96686.	191335.	281838.	435417.	584335.	767945.	993697.
10	32119.	40697.	54931.	101899.	200324.	292437.	445755.	591358.	768095.	981778.

STATION   : 08057000   TRINITY RIVER AT DALLAS, TX
LOCATION   : LATITUDE N32:46:29, LONGITUDE W096:49:18
DRAINAGE AREA   : 6106.00 mi2 (15818 km2)
PERIOD OF RECORD: 07/1903 - 09/1990
GAGE ALTITUDE   : 368.02 (112.1 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8057000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	55974.88	58210.76	0.34E+10	2.803	7.85
2	103897.52	108716.68	0.12E+11	2.834	7.94
3	141647.59	147702.75	0.22E+11	2.875	8.17
4	169777.20	178366.31	0.32E+11	2.971	8.74
5	192033.03	200315.78	0.40E+11	2.970	8.76
6	210604.30	212069.88	0.45E+11	2.840	8.13
7	226977.19	220985.00	0.49E+11	2.675	7.28
8	242169.34	229190.36	0.53E+11	2.514	6.40
9	255717.58	237374.36	0.56E+11	2.375	5.64
10	267139.84	244545.34	0.60E+11	2.276	5.14

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	9934.	12949.	18132.	36354.	78034.	119792.	193258.	266469.	358765.	474420.
2	17711.	23455.	33353.	68060.	146197.	222906.	355221.	484112.	643845.	840232.
3	24035.	32062.	45879.	94002.	200479.	303062.	476959.	643229.	846385.	1092403.
4	28477.	38175.	54888.	113014.	240907.	363232.	569077.	764598.	1001909.	1287700.
5	32184.	43267.	62362.	128581.	273319.	410742.	640372.	857126.	1118626.	1431946.
6	35773.	48294.	69816.	143695.	302028.	449368.	691027.	915427.	1182018.	1497283.
7	39180.	52992.	76669.	157243.	327238.	483008.	734939.	966027.	1237452.	1555344.
8	42783.	57761.	83340.	169714.	349850.	513288.	775422.	1014150.	1292808.	1617414.
9	44879.	60933.	88373.	180721.	371402.	542323.	813217.	1057316.	1339253.	1664837.
10	46065.	63075.	92218.	190125.	390407.	567663.	845066.	1092042.	1374078.	1696507.

STATION   : 08061500   E FK TRINITY R NR ROCKWALL, TEX.(DISC)
LOCATION   : LATITUDE N32:55:25, LONGITUDE W096:30:20
DRAINAGE AREA   :   840.00 mi2 (2176.   km2)
PERIOD OF RECORD: 10/1923 - 09/1954
GAGE ALTITUDE   :   404.32 (123.2 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8061500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	37151.07	26380.43	0.70E+09	1.022	-0.10
2	59295.21	38725.14	0.15E+10	0.911	-0.11
3	71965.63	44806.48	0.20E+10	0.774	-0.54
4	80973.88	50121.04	0.25E+10	0.813	-0.51
5	87438.29	53975.24	0.29E+10	0.922	-0.20
6	92569.91	57346.13	0.33E+10	0.977	-0.06
7	98298.65	60775.84	0.37E+10	0.908	-0.24
8	102788.76	62873.50	0.40E+10	0.847	-0.40
9	105962.30	64617.39	0.42E+10	0.827	-0.48
10	109425.54	66245.14	0.44E+10	0.790	-0.57

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	7348.	10233.	15039.	29828.	55546.	74988.	101466.	122157.	143354.	165236.
2	12988.	17913.	25941.	49611.	88139.	115664.	151430.	178231.	204787.	231339.
3	17346.	23396.	33089.	61004.	105654.	137378.	178620.	209611.	240415.	271377.
4	20367.	27130.	37879.	68659.	118006.	153362.	199809.	235099.	270551.	306525.
5	22778.	30083.	41614.	74385.	126666.	164104.	213371.	250894.	288698.	327160.
6	24651.	32298.	44328.	78524.	133494.	173276.	226206.	266960.	308427.	350986.
7	26136.	34196.	46886.	83100.	141773.	184564.	241897.	286328.	331788.	378678.
8	27692.	36113.	49342.	87013.	147999.	192510.	252228.	298581.	346081.	395145.
9	28680.	37358.	50979.	89736.	152466.	198262.	259733.	307473.	356424.	407011.
10	29596.	38625.	52793.	92982.	157579.	204404.	266847.	315046.	364206.	414772.

STATION   : 08062500   TRINITY RIVER NR ROSSER, TX
LOCATION   : LATITUDE N32:25:35, LONGITUDE W096:27:46
DRAINAGE AREA   : 8146.00 mi2 (21103 km2)
PERIOD OF RECORD: 08/1924 - 09/1990
GAGE ALTITUDE   : 302.65 (92.24 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8062500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	80031.76	61365.10	0.38E+10	1.999	2.58
2	156046.30	122585.96	0.15E+11	2.051	2.71
3	219006.98	162529.58	0.26E+11	1.813	2.04
4	273798.38	199108.03	0.40E+11	1.703	1.73
5	325823.50	239762.27	0.57E+11	1.725	1.74
6	372934.94	281455.16	0.79E+11	1.834	1.99
7	415899.53	318979.66	0.10E+12	1.847	1.97
8	453704.47	352240.69	0.12E+12	1.830	1.87
9	484386.16	375267.66	0.14E+12	1.770	1.66
10	509868.50	393176.47	0.15E+12	1.708	1.45

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	19101.	24867.	34226.	63015.	115896.	159279.	223471.	278069.	338316.	405099.
2	36802.	47759.	65610.	121166.	225404.	312764.	444506.	558453.	686170.	829602.
3	53216.	69149.	94927.	173735.	317246.	434155.	606170.	751754.	911777.	1088510.
4	66652.	86890.	119571.	218857.	397498.	541235.	750464.	925711.	1116706.	1325896.
5	78378.	102345.	141133.	259423.	473317.	646078.	898291.	1110072.	1341329.	1595074.
6	90043.	116820.	160230.	293724.	539376.	741571.	1041772.	1297951.	1581569.	1896837.
7	99951.	129255.	176854.	324382.	599982.	830404.	1177409.	1477223.	1813136.	2190180.
8	106653.	138378.	190111.	351521.	655651.	911563.	1298859.	1634870.	2012552.	2437712.
9	112075.	146122.	201759.	375503.	702235.	976026.	1388492.	1744855.	2143572.	2590824.
10	117476.	153357.	212030.	395336.	739999.	1028598.	1462975.	1837958.	2257093.	2726901.

STATION   : 08063000   CEDAR CR NR MABANK, TEX.(DISC)
LOCATION   : LATITUDE N32:19:45, LONGITUDE W096:10:05
DRAINAGE AREA   : 733.00 mi2 (1898. km2)
PERIOD OF RECORD: 10/1938 - 02/1966
GAGE ALTITUDE   : 285.54 (87.03 m)
TOTAL PERIOD OF RECORD: 27 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8063000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	29207.72	18405.00	0.34E+09	0.811	-0.18
2	52630.32	33073.99	0.11E+10	0.825	0.01
3	68116.07	42854.54	0.18E+10	0.811	-0.11
4	78641.99	49484.15	0.24E+10	0.723	-0.49
5	85851.85	55377.29	0.31E+10	0.755	-0.53
6	91522.66	60873.29	0.37E+10	0.870	-0.33
7	97191.05	67727.51	0.46E+10	1.081	0.13
8	102480.45	74177.80	0.55E+10	1.235	0.52
9	106549.94	79569.41	0.63E+10	1.422	1.07
10	109435.94	82024.32	0.67E+10	1.467	1.25

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	7291.	9622.	13344.	24240.	42539.	56274.	75101.	89984.	105454.	121636.
2	13087.	17303.	24035.	43735.	76738.	101436.	135191.	161798.	189385.	218177.
3	16903.	22355.	31065.	56570.	99338.	131367.	175162.	209698.	245520.	282918.
4	19365.	25622.	35636.	65085.	114797.	152242.	203696.	244451.	286876.	331312.
5	20506.	27222.	38037.	70247.	125633.	167996.	226936.	274136.	323706.	376044.
6	21532.	28533.	39856.	73956.	133763.	180402.	246373.	300049.	357149.	418199.
7	22831.	29961.	41535.	76954.	141145.	192984.	268599.	332001.	401136.	476874.
8	23684.	30986.	42900.	79854.	148423.	205075.	289335.	361303.	440966.	529518.
9	24534.	32006.	44213.	82297.	153767.	213525.	303368.	380852.	467395.	564336.
10	24887.	32613.	45255.	84673.	158343.	219567.	311048.	389506.	476630.	573770.

STATION   : 08063500   RICHLAND CREEK NR RICHLAND, TX
LOCATION   : LATITUDE N31:57:02, LONGITUDE WO96:25:16
DRAINAGE AREA   :   734.00 mi2 (1901.   km2)
PERIOD OF RECORD: 04/1939   - 09/1988
GAGE ALTITUDE   :   299.12 (91.17 m)
TOTAL PERIOD OF RECORD: 24 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8063500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	38143.80	25418.97	0.65E+09	0.448	-1.09
2	63111.74	38629.80	0.15E+10	0.080	-1.35
3	78154.21	47958.17	0.23E+10	0.076	-1.31
4	89458.03	58145.28	0.34E+10	0.375	-0.84
5	96547.95	65365.79	0.43E+10	0.612	-0.34
6	101048.02	70347.36	0.49E+10	0.781	0.07
7	104242.41	74162.69	0.55E+10	0.908	0.43
8	106287.18	76867.17	0.59E+10	1.006	0.74
9	108158.44	79926.59	0.64E+10	1.139	1.15
10	109345.47	82084.27	0.67E+10	1.257	1.54

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5014.	8139.	13809.	32221.	61481.	80171.	101262.	114907.	126792.	137218.
2	8070.	13573.	23686.	55822.	102777.	129651.	157031.	172991.	185733.	196023.
3	9968.	16704.	29079.	68647.	127390.	161665.	197207.	218300.	235384.	249398.
4	11511.	18847.	32231.	75905.	145134.	188999.	238058.	269480.	296584.	320191.
5	12638.	20346.	34332.	80258.	155586.	205509.	263756.	302719.	337677.	369023.
6	13360.	21283.	35612.	82876.	162116.	216105.	280733.	325079.	365772.	402878.
7	13639.	21697.	36290.	84729.	167044.	223913.	292903.	340827.	385255.	426187.
8	13703.	21824.	36569.	85817.	170349.	229281.	301346.	351765.	398776.	442335.
9	13740.	21887.	36716.	86587.	173259.	234398.	309973.	363362.	413536.	460391.
10	13817.	21997.	36896.	87143.	174985.	237317.	314798.	369812.	421728.	470410.

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STATION   : 08064500   CHAMBERS CREEK NR CORSICANA, TX (DISC)
LOCATION   : LATITUDE N32:06:29, LONGITUDE W096:22:14
DRAINAGE AREA   : 963.00 mi2 (2494. km2)
PERIOD OF RECORD: 04/1939 - 09/1984
GAGE ALTITUDE   : 294.28 (89.69 m)
TOTAL PERIOD OF RECORD: 22 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8064500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	30190.24	18768.89	0.35E+09	0.701	-0.51
2	54154.18	35200.04	0.12E+10	0.732	-0.74
3	69525.26	45910.88	0.21E+10	0.710	-0.86
4	78525.45	53086.40	0.28E+10	0.762	-0.79
5	85154.29	59977.97	0.36E+10	0.840	-0.71
6	90602.98	65505.65	0.43E+10	0.850	-0.77
7	94596.34	70126.81	0.49E+10	0.901	-0.73
8	97996.25	75219.89	0.57E+10	1.027	-0.45
9	100371.62	78224.41	0.61E+10	1.097	-0.28
10	102645.48	80563.61	0.65E+10	1.154	-0.13

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5657.	8426.	13058.	26613.	46428.	58701.	72473.	81437.	89346.	96341.
2	9742.	14502.	22539.	46640.	83517.	107415.	135304.	154134.	171269.	186821.
3	11987.	18009.	28272.	59452.	107773.	139311.	176254.	201260.	224046.	244744.
4	12558.	19265.	30888.	66830.	122894.	159282.	201453.	229653.	255049.	277866.
5	12756.	19753.	32049.	71036.	133996.	176038.	225866.	259849.	290940.	319251.
6	12856.	20075.	32906.	74406.	143216.	190130.	246667.	285779.	321964.	355267.
7	12946.	20297.	33453.	76627.	149795.	200622.	262865.	306536.	347393.	385408.
8	13000.	20401.	33718.	78053.	155104.	209896.	278427.	327420.	373955.	417904.
9	13175.	20697.	34259.	79576.	158773.	215353.	286399.	337363.	385900.	431856.
10	13468.	21176.	35075.	81463.	162267.	219791.	291767.	343232.	392118.	438283.

STATION   : 08065000   TRINITY RIVER NR OAKWOOD, TX
LOCATION   : LATITUDE N31:38:54, LONGITUDE W095:47:21
DRAINAGE AREA   : 12833.00 mi2 (33246 km2)
PERIOD OF RECORD: 10/1923 - 09/1990
GAGE ALTITUDE   : 175.06 (53.35 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8065000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	94543.19	70854.72	0.50E+10	1.588	1.50
2	185933.31	137736.67	0.19E+11	1.561	1.42
3	272535.78	199846.38	0.40E+11	1.539	1.36
4	353776.00	257717.08	0.66E+11	1.543	1.40
5	428224.56	307797.72	0.95E+11	1.523	1.39
6	498405.31	353404.81	0.12E+12	1.479	1.27
7	563511.00	395981.06	0.16E+12	1.453	1.22
8	624164.88	434242.44	0.19E+12	1.428	1.18
9	678936.06	467054.81	0.22E+12	1.387	1.07
10	728739.75	495714.06	0.25E+12	1.344	0.95

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	25363.	31524.	41441.	72355.	132045.	184318.	266724.	341219.	428266.	529687.
2	50420.	62610.	82194.	142991.	259672.	361333.	520930.	664634.	832048.	1026527.
3	74851.	92787.	121540.	210479.	380325.	527740.	758460.	965660.	1206553.	1485852.
4	98396.	121691.	158973.	273997.	493032.	682805.	979448.	1245661.	1554963.	1913428.
5	121070.	149401.	194624.	333478.	596166.	822605.	1175133.	1490385.	1855664.	2277914.
6	142435.	175611.	228453.	390029.	693793.	954257.	1358002.	1717571.	2132912.	2611541.
7	162017.	199726.	259698.	442522.	784569.	1076611.	1527699.	1928032.	2389247.	2919328.
8	180268.	222408.	289307.	492418.	869718.	1189725.	1681235.	2114920.	2612441.	3181690.
9	196457.	242812.	316277.	538341.	947439.	1291635.	1816668.	2276564.	2801364.	3398421.
10	210891.	261304.	341064.	580984.	1018845.	1383812.	1936027.	2415712.	2959599.	3574349.

STATION   : 08065500   TRINITY RIVER NEAR MIDWAY, TEX. (DISC)
LOCATION   : LATITUDE N31:04:28, LONGITUDE W095:41:57
DRAINAGE AREA   : 14450.00 mi2 (37435 km2)
PERIOD OF RECORD : 04/1939 - 11/1970
GAGE ALTITUDE   : 118.05 (35.98 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8065500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	107985.84	88403.40	0.78E+10	1.328	-0.48
2	213563.17	174002.63	0.30E+11	1.346	-0.42
3	316278.66	256357.38	0.66E+11	1.351	-0.40
4	411740.28	330521.63	0.11E+12	1.376	-0.31
5	500628.16	396601.75	0.16E+12	1.401	-0.22
6	585577.31	458636.78	0.21E+12	1.415	-0.15
7	661572.69	508623.00	0.26E+12	1.424	-0.08
8	731376.81	550377.06	0.30E+12	1.414	-0.06
9	795315.31	584973.25	0.34E+12	1.390	-0.07
10	854890.31	614995.75	0.38E+12	1.355	-0.11

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	26358.	32657.	43086.	77603.	151202.	221540.	341388.	457976.	602342.	780517.
2	52681.	65195.	85877.	154107.	298910.	436779.	670933.	898086.	1178721.	1524344.
3	78697.	97313.	128034.	229087.	442610.	645186.	988147.	1319955.	1728954.	2231606.
4	104387.	128822.	169023.	300473.	575816.	835226.	1271730.	1691844.	2207464.	2838615.
5	129711.	159763.	209013.	368833.	699796.	1008724.	1524225.	2016859.	2617891.	3349538.
6	154416.	189865.	247778.	434607.	818111.	1173553.	1762951.	2323194.	3003672.	3828611.
7	178593.	219236.	285330.	496597.	924138.	1315801.	1958285.	2563465.	3292832.	4170753.
8	201974.	247635.	321529.	555440.	1021698.	1443435.	2127495.	2765362.	3527854.	4438458.
9	224410.	274888.	356171.	610953.	1111114.	1557599.	2273861.	2934709.	3718300.	4646508.
10	245983.	301037.	389289.	663458.	1194287.	1662544.	2406315.	3086012.	3886124.	4826983.

STATION : 8065800   BEDIAS CREEK NEAR MADISONVILLE, TX
LOCATION   : LATITUDE N30:53:03, LONGITUDE W095:46:39
DRAINAGE AREA   : 321.00 mi2 (831.6 km2)
PERIOD OF RECORD: 10/1967 - 09/1990
GAGE ALTITUDE   : 150.00 (45.72 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8065800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15962.63	12033.25	0.14E+09	0.949	-0.61
2	24295.80	15606.40	0.24E+09	0.714	-0.99
3	29258.01	17274.68	0.30E+09	0.616	-0.97
4	32876.30	18697.35	0.35E+09	0.569	-0.90
5	35848.48	21256.77	0.45E+09	0.913	0.05
6	38640.25	25238.22	0.64E+09	1.613	2.43
7	39934.52	26458.13	0.70E+09	1.730	2.90
8	41041.21	27234.30	0.74E+09	1.789	3.19
.9	42872.21	30124.28	0.91E+09	2.147	4.57
10	44196.65	31642.64	0.10E+10	2.218	4.83

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	2920.	4069.	6012.	12251.	23934.	33381.	47030.	58284.	70349.	83318.
2	5514.	7528.	10794.	20375.	36010.	47258.	61999.	73142.	84261.	95474.
3	7392.	9968.	14038.	25459.	42871.	54710.	69532.	80295.	90719.	100904.
4	8506.	11508.	16205.	29138.	48089.	60486.	75481.	86030.	96006.	105482.
5	9048.	12301.	17416.	31602.	52550.	66317.	83016.	94788.	105935.	116534.
6	9371.	12746.	18114.	33323.	56691.	72629.	92591.	107082.	121109.	134790.
7	9583.	13068.	18620.	34387.	58644.	75186.	95892.	110910.	125436.	139587.
8	9787.	13397.	19148.	35455.	60342.	77154.	98007.	113000.	127405.	141325.
9	10237.	13858.	19658.	36318.	62733.	81318.	105256.	123085.	140678.	158227.
10	10640.	14285.	20124.	37025.	64432.	84201.	110273.	130137.	150124.	170432.

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STATION   : 08066000   TRINITY RIVER AT RIVERSIDE, TX
LOCATION   : LATITUDE N30:51:33, LONGITUDE W095:23:55
DRAINAGE AREA   : 15589.00 mi2 (40386 km2)
PERIOD OF RECORD   : 10/1923 - 09/1968
GAGE ALTITUDE   : 89.86 (27.38 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8066000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	89090.91	53502.66	0.29E+10	1.420	1.13
2	175345.45	105851.78	0.11E+11	1.432	1.16
3	256443.03	157469.63	0.25E+11	1.443	1.16
4	332263.19	206585.13	0.43E+11	1.452	1.17
5	405421.53	252111.06	0.64E+11	1.437	1.15
6	475656.22	295784.63	0.87E+11	1.434	1.17
7	542512.50	336110.50	0.11E+12	1.422	1.13
8	605805.00	372374.13	0.14E+12	1.398	1.06
9	666874.75	406794.28	0.17E+12	1.373	0.99
10	725299.81	437908.63	0.19E+12	1.323	0.83

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	30554.	37135.	47189.	75460.	122355.	158466.	209708.	251850.	297465.	346990.
2	60295.	73107.	92701.	148030.	240502.	312268.	414812.	499649.	592017.	692765.
3	87789.	106099.	134221.	214530.	351284.	459354.	616211.	747739.	892784.	1052624.
4	113382.	136707.	172643.	276087.	454643.	597591.	807364.	985147.	1182896.	1402599.
5	137396.	165971.	210016.	336831.	555583.	730496.	986882.	1203820.	1444865.	1712320.
6	160795.	194371.	246131.	395172.	652195.	857613.	1158581.	1413082.	1695755.	2009236.
7	183866.	222203.	281273.	451181.	743737.	977252.	1319028.	1607756.	1928204.	2283320.
8	206506.	249428.	315479.	505005.	830155.	1088891.	1466652.	1785026.	2137765.	2527981.
9	228409.	275812.	348670.	557198.	913603.	1196280.	1607867.	1953934.	2336563.	2759099.
10	249153.	301048.	380697.	607872.	994000.	1298663.	1740288.	2110196.	2517730.	2966460.

STATION   : 08066500   TRINITY RIVER AT ROMAYOR, TX
LOCATION   : LATITUDE N30:25:30, LONGITUDE W094:51:02
DRAINAGE AREA   : 17186.00 mi2 (44523 km2)
PERIOD OF RECORD: 05/1924 - 09/1990
GAGE ALTITUDE   : 35.92 (10.94 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8066500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	88839.67	46431.03	0.22E+10	1.159	0.91
2	174842.97	93090.26	0.87E+10	1.156	0.83
3	257937.22	138216.88	0.19E+11	1.151	0.80
4	337441.34	182548.05	0.33E+11	1.149	0.75
5	413101.53	226678.44	0.51E+11	1.141	0.68
6	485038.00	268169.72	0.72E+11	1.128	0.60
7	553322.38	308333.78	0.95E+11	1.142	0.58
8	619255.56	346864.25	0.12E+12	1.146	0.55
9	682858.94	383430.16	0.15E+12	1.139	0.49
10	744400.69	418613.94	0.18E+12	1.125	0.43

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	31429.	39024.	50314.	79751.	122560.	151517.	188319.	215649.	242752.	269947.
2	61429.	76044.	97861.	155500.	241343.	300739.	377729.	435951.	494585.	554228.
3	90226.	111655.	143701.	228722.	356225.	445034.	560778.	648766.	737747.	828629.
4	117598.	145320.	186882.	297846.	466080.	584533.	740305.	859758.	981410.	1106516.
5	142561.	176044.	226445.	362238.	571186.	720378.	918830.	1072681.	1230729.	1394640.
6	166870.	205772.	264463.	423511.	670669.	848860.	1087795.	1274468.	1467430.	1668764.
7	191054.	234776.	300859.	480988.	763995.	970385.	1249839.	1470262.	1699882.	1941293.
8	214558.	262926.	336130.	536545.	854010.	1087512.	1405970.	1658943.	1923995.	2204233.
9	237049.	290005.	370226.	590465.	941102.	1200353.	1555487.	1838812.	2136697.	2452725.
10	258472.	315956.	403094.	642771.	1025638.	1309688.	1699938.	2012113.	2341121.	2690893.

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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8068000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	30507.44	35144.80	0.12E+10	2.898	8.27
2	53055.65	55139.33	0.30E+10	2.337	5.04
3	67563.09	66988.06	0.45E+10	2.342	5.51
4	77481.21	73457.60	0.54E+10	2.261	5.33
5	83921.55	76759.18	0.59E+10	2.169	4.99
6	88541.93	78614.04	0.62E+10	2.054	4.52
7	92278.18	79893.79	0.64E+10	1.937	4.06
8	95783.64	80834.94	0.65E+10	1.819	3.62
9	98930.81	81664.12	0.67E+10	1.714	3.23
10	101098.97	82130.52	0.67E+10	1.654	3.01

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3195.	4764.	7682.	18798.	44928.	70153.	112066.	151080.	197051.	251014.
2	6005.	8948.	14360.	34414.	79440.	121114.	187870.	247934.	316781.	395461.
3	8393.	12380.	19600.	45568.	101530.	151636.	229779.	298443.	375690.	462429.
4	10367.	15173.	23768.	53931.	116696.	171318.	254549.	326204.	405511.	493230.
5	11786.	17182.	26754.	59762.	126649.	183580.	268715.	340806.	419519.	505523.
6	12642.	18470.	28784.	64029.	134165.	192819.	279132.	351143.	428780.	512641.
7	13240.	19422.	30362.	67533.	140438.	200482.	287563.	359224.	435568.	517143.
8	13743.	20280.	31863.	71002.	146537.	207640.	294718.	365187.	439162.	517156.
9	14113.	20980.	33172.	74205.	152172.	214100.	300770.	369693.	440958.	515020.
10	14454.	21585.	34228.	76589.	155949.	218041.	303710.	370942.	439754.	510439.

STATION : 8068520
LOCATION : LATITUDE N30:05:31, LONGITUDE W095:24:21
DRAINAGE AREA : 419.00 mi2 (1085. km2)
PERIOD OF RECORD: 04/1939 - 09/1990
GAGE ALTITUDE : 62.17 (18.94 m)
TOTAL PERIOD OF RECORD: 52 YRS.

SPRING CREEK AT SPRING, TX

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8068520

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13257.48	12312.78	0.15E+09	1.824	3.58
2	23137.23	21405.72	0.46E+09	2.121	5.78
3	29251.51	25310.61	0.64E+09	1.816	4.28
4	32867.54	27017.60	0.73E+09	1.566	3.23
5	35406.80	28368.73	0.80E+09	1.412	2.63
6	37536.39	29411.62	0.87E+09	1.232	1.96
7	39084.98	30175.11	0.91E+09	1.103	1.49
8	40416.47	30873.57	0.95E+09	1.001	1.10
9	41574.58	31357.08	0.98E+09	0.922	0.84
10	42410.02	31745.57	0.10E+10	0.883	0.68

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1147.	1934.	3474.	9335.	21237.	30669.	43424.	53133.	62789.	72292.
2	2053.	3467.	6223.	16591.	37159.	53096.	74205.	89979.	105433.	120423.
3	2729.	4627.	8308.	21824.	47345.	66173.	89984.	107048.	123203.	138353.
4	3149.	5365.	9652.	25166.	53504.	73697.	98424.	115619.	131491.	146042.
5	3421.	5829.	10483.	27276.	57787.	79414.	105782.	124042.	140837.	156193.
6	3603.	6152.	11087.	28946.	61472.	84554.	112710.	132211.	150150.	166552.
7	3737.	6388.	11526.	30154.	64143.	88291.	117769.	138197.	156995.	174189.
8	3858.	6599.	11915.	31201.	66416.	91440.	121991.	143164.	162645.	180463.
9	3991.	6829.	12332.	32244.	68390.	93923.	124931.	146312.	165902.	183761.
10	4162.	7091.	12743.	33048.	69632.	95349.	126482.	147899.	167487.	185319.

STATION   : 8069500   WEST FORK SAN JACINTO RIVER NR HUMBLE, TX
LOCATION   : LATITUDE N30:01:37, LONGITUDE W095:15:28
DRAINAGE AREA : 1741.00 mi2 (4510. km2)
PERIOD OF RECORD: 10/1928 - 09/1954
GAGE ALTITUDE :   30.53 (9.305 m)
TOTAL PERIOD OF RECORD: 26 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8069500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	56644.13	73984.44	0.55E+10	2.655	4.71
2	100736.70	123246.26	0.15E+11	2.531	4.22
3	132775.86	152156.20	0.23E+11	2.386	3.72
4	154816.03	167868.34	0.28E+11	2.306	3.49
5	170096.41	175177.42	0.31E+11	2.202	3.16
6	181549.41	180179.19	0.32E+11	2.115	2.91
7	191247.67	184445.97	0.34E+11	2.028	2.65
8	198880.98	187422.83	0.35E+11	1.956	2.44
9	205343.58	189905.97	0.36E+11	1.918	2.33
10	210923.16	192136.52	0.37E+11	1.883	2.24

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	8561.	10939.	15157.	31179.	73396.	121385.	217314.	324338.	473146.	677871.
2	15247.	19944.	28214.	58846.	135161.	217474.	372371.	536504.	754060.	1040310.
3	20341.	27055.	38813.	81483.	182982.	287511.	475400.	665769.	908991.	1217326.
4	24709.	33051.	47550.	99086.	216898.	333684.	536546.	735089.	982083.	1286643.
5	28274.	37911.	54543.	112591.	241040.	364526.	573257.	772291.	1014703.	1307519.
6	30803.	41420.	59679.	122689.	259292.	388006.	601626.	802076.	1042614.	1329487.
7	32730.	44177.	63833.	131152.	274911.	408257.	626351.	828379.	1067871.	1350561.
8	34385.	46516.	67309.	138045.	287180.	423734.	644432.	846745.	1084234.	1362243.
9	36045.	48817.	70649.	144324.	297455.	435739.	656463.	856610.	1089201.	1359164.
10	37404.	50727.	73460.	149701.	306366.	446239.	667204.	865761.	1094556.	1358231.

STATION : 8070000   EAST FORK SAN JACINTO RIVER NR CLEVELAND, TX
LOCATION   : LATITUDE N30:20:11, LONGITUDE W095:06:14
DRAINAGE AREA   : 325.00 mi2 (841.9 km2)
PERIOD OF RECORD: 05/1939 - 09/1990
GAGE ALTITUDE   : 107.98 (32.91 m)
TOTAL PERIOD OF RECORD: 51 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8070000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14273.88	16937.25	0.29E+09	2.568	6.06
2	22998.58	25209.25	0.64E+09	2.649	7.21
3	28864.99	29749.82	0.89E+09	2.600	7.19
4	32673.88	31907.63	0.10E+10	2.441	6.39
5	35175.27	33105.82	0.11E+10	2.316	5.78
6	36860.47	33801.71	0.11E+10	2.224	5.32
7	38323.03	34548.94	0.12E+10	2.141	4.81
8	39630.02	34974.47	0.12E+10	2.070	4.48
9	40806.93	35376.81	0.13E+10	2.017	4.21
10	41798.90	35612.35	0.13E+10	1.973	4.01

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	1637.	2321.	3567.	8330.	20085.	32258.	54012.	75722.	103043.	137087.
2	3111.	4350.	6555.	14560.	32888.	50715.	80910.	109691.	144513.	186417.
3	4345.	6019.	8950.	19227.	41595.	62446.	96513.	127999.	165098.	208715.
4	5037.	7042.	10536.	22553.	47698.	70201.	105630.	137265.	173435.	214796.
5	5477.	7714.	11604.	24820.	51780.	75262.	111340.	142799.	178070.	217630.
6	5772.	8180.	12362.	26445.	54596.	78580.	114698.	145580.	179644.	217240.
7	5986.	8533.	12957.	27785.	57026.	81558.	117971.	148667.	182122.	218623.
8	6208.	8900.	13578.	29140.	59252.	84020.	120097.	149977.	182048.	216557.
9	6436.	9267.	14182.	30402.	61223.	86101.	121706.	150711.	181401.	213999.
10	6654.	9609.	14733.	31515.	62881.	87780.	122864.	151032.	180464.	211372.

STATION : 8071500   SAN JACINTO R NR HUFFMAN, TEX (DISC)
LOCATION   : LATITUDE N29:59:40, LONGITUDE W095:08:00
DRAINAGE AREA   : 2800.00 mi2 (7253. km2)
PERIOD OF RECORD: 10/1936 - 09/1953
GAGE ALTITUDE   : 1.93 (0.588 m)
TOTAL PERIOD OF RECORD: 17 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8071500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	87342.74	114612.32	0.13E+11	2.744	4.89
2	156722.20	196854.70	0.39E+11	2.667	4.58
3	209260.88	250198.00	0.63E+11	2.518	4.02
4	247074.03	286303.00	0.82E+11	2.486	3.93
5	272965.28	300357.00	0.90E+11	2.358	3.48
6	292657.66	309400.50	0.96E+11	2.209	2.94
7	308680.66	319097.94	0.10E+12	2.090	2.47
8	321643.22	326421.72	0.11E+12	1.995	2.10
9	331880.78	331588.63	0.11E+12	1.927	1.84
10	339890.31	334995.31	0.11E+12	1.878	1.66

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	10514.	14175.	20833.	46993.	117520.	198287.	357828.	534040.	775358.	1102783.
2	20020.	27043.	39699.	88336.	214390.	353751.	619893.	904923.	1285338.	1788685.
3	27398.	37296.	55059.	122326.	291363.	472577.	808916.	1158773.	1615177.	2204857.
4	33943.	46122.	67820.	148699.	346799.	554466.	932449.	1318375.	1814572.	2446378.
5	39390.	53601.	78722.	170598.	388091.	609019.	1000059.	1388438.	1877235.	2486118.
6	43392.	59115.	86797.	186946.	419484.	651446.	1055418.	1450458.	1941432.	2545542.
7	47139.	63876.	93222.	198793.	442555.	685056.	1106781.	1518825.	2030872.	2660758.
8	50383.	67954.	98655.	208550.	461099.	711769.	1147145.	1572430.	2100796.	2750890.
9	52654.	71012.	103021.	217049.	476955.	733013.	1174872.	1603749.	2133980.	2783117.
10	54621.	73648.	106756.	224109.	489439.	748944.	1193880.	1623317.	2151618.	2795554.

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STATION : 08079600 DMF BRAZOS RIVER AT JUSTICEBURG, TX
LOCATION : LATITUDE N33:02:18, LONGITUDE W101:11:50
DRAINAGE AREA : 1466.00 mi2 (3797. km2)
PERIOD OF RECORD: 12/1961 - 09/1991
GAGE ALTITUDE : 2222.47 (677.4 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8079600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	5922.03	5197.52	0.27E+08	0.960	-0.35
2	7205.09	5585.76	0.31E+08	0.747	-0.42
3	7719.12	5691.69	0.32E+08	0.571	-0.69
4	8127.04	5889.57	0.35E+08	0.413	-0.98
5	8225.79	5965.62	0.36E+08	0.390	-1.05
6	8590.27	6252.11	0.39E+08	0.417	-1.11
7	8809.78	6352.88	0.40E+08	0.374	-1.17
8	9124.01	6504.76	0.42E+08	0.298	-1.30
9	9302.24	6650.00	0.44E+08	0.316	-1.32
10	9456.15	6764.88	0.46E+08	0.298	-1.38

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	539.	869.	1509.	3976.	9417.	14176.	21290.	27242.	33624.	40463.
2	671.	1139.	2049.	5419.	11861.	16667.	22805.	27242.	31473.	35468.
3	737.	1268.	2299.	6033.	12781.	17515.	23225.	27133.	30691.	33919.
4	749.	1302.	2387.	6353.	13545.	18571.	24599.	28697.	32403.	35748.
5	750.	1307.	2401.	6414.	13721.	18844.	25001.	29195.	32993.	36425.
6	775.	1361.	2516.	6749.	14351.	19583.	25759.	29890.	33569.	36854.
7	786.	1390.	2584.	6963.	14761.	20061.	26242.	30323.	33914.	37091.
8	835.	1466.	2709.	7232.	15254.	20703.	27064.	31273.	34986.	38276.
9	870.	1520.	2792.	7388.	15495.	20992.	27406.	31652.	35401.	38725.
10	883.	1542.	2832.	7499.	15750.	21359.	27922.	32277.	36130.	39553.

STATION : 08080500 DMF BRAZOS RIVER NR ASPERMONT, TX
LOCATION : LATITUDE N33:00:29, LONGITUDE W100:10:49
DRAINAGE AREA : 8796.00 mi2 (22787 km2)
PERIOD OF RECORD: 01/1924 - 09/1991
GAGE ALTITUDE : 1624.79 (495.2 m)
TOTAL PERIOD OF RECORD: 62 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8080500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	20804.47	20492.13	0.42E+09	2.430	6.43
2	29401.31	28308.96	0.80E+09	2.299	5.41
3	33155.32	30606.73	0.94E+09	2.124	4.49
4	35476.72	31551.84	0.10E+10	1.983	3.83
5	37112.83	32186.04	0.10E+10	1.895	3.44
6	38611.49	32900.52	0.11E+10	1.807	2.99
7	39960.52	33368.43	0.11E+10	1.740	2.66
8	41045.21	33678.30	0.11E+10	1.687	2.45
9	42212.36	33826.04	0.11E+10	1.612	2.25
10	43465.38	34369.36	0.12E+10	1.536	1.96

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2973.	4300.	6638.	14634.	30738.	44418.	64879.	82220.	101183.	121931.
2	4489.	6378.	9666.	20797.	43186.	62349.	91308.	116143.	143597.	173962.
3	5546.	7691.	11372.	23668.	48345.	69678.	102336.	130774.	162651.	198424.
4	6207.	8538.	12511.	25646.	51732.	74152.	108351.	138065.	171326.	208618.
5	6631.	9109.	13317.	27122.	54218.	77272.	112146.	142217.	175673.	212965.
6	7099.	9694.	14080.	28383.	56310.	80025.	115875.	146792.	181207.	219596.
7	7556.	10281.	14865.	29678.	58255.	82291.	118357.	149260.	183487.	221486.
8	7823.	10670.	15449.	30787.	59989.	84226.	120170.	150626.	184046.	220819.
9	7999.	10995.	16024.	32056.	62066.	86486.	122055.	151654.	183651.	218336.
10	8170.	11287.	16525.	33190.	64140.	89082.	125073.	154743.	186563.	220788.

STATION   : RUNNING WATER DRAW AT PLAINVIEW, TEX (DISC)
LOCATION   : LATITUDE N34:10:44, LONGITUDE W101:42:08
DRAINAGE AREA   :   1291.00 mi2 (3344. km2)
PERIOD OF RECORD: 07/1939 - 09/1978
GAGE ALTITUDE   :   3341.11 (1018. m)
TOTAL PERIOD OF RECORD: 36 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8080700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	679.99	1345.35	0.18E+07	3.853	14.17
2	1065.91	2259.21	0.51E+07	4.028	15.16
3	1239.55	2636.94	0.70E+07	4.114	15.87
4	1320.04	2787.19	0.78E+07	4.154	16.23
5	1376.84	2875.21	0.83E+07	4.152	16.27
6	1411.90	2960.19	0.88E+07	4.215	16.72
7	1442.40	3000.33	0.90E+07	4.235	16.90
8	1455.85	3031.60	0.92E+07	4.258	17.06
9	1477.89	3059.76	0.94E+07	4.243	16.99
10	1511.45	3158.30	0.10E+08	4.291	17.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	5.	10.	25.	136.	760.	1882.	4980.	9362.	16544.	27954.
2	5.	12.	30.	184.	1132.	2927.	8065.	15527.	27962.	48021.
3	6.	13.	33.	208.	1311.	3436.	9605.	18666.	33907.	58702.
4	6.	13.	34.	222.	1418.	3726.	10413.	20198.	36579.	63089.
5	6.	13.	36.	233.	1500.	3940.	10973.	21200.	38216.	65573.
6	6.	13.	36.	241.	1554.	4068.	11253.	21613.	38716.	65989.
7	6.	14.	37.	251.	1620.	4217.	11554.	22004.	39060.	65943.
8	6.	14.	38.	256.	1643.	4262.	11621.	22054.	39011.	65627.
9	6.	14.	38.	259.	1671.	4346.	11885.	22593.	40021.	67409.
10	6.	14.	39.	262.	1696.	4422.	12135.	23128.	41075.	69365.

STATION   : 08082000   SALT FK BRAZOS R NR ASPERMONT, TX
LOCATION   : LATITUDE N33:20:02, LONGITUDE W100:14:16
DRAINAGE AREA   : 5130.00 mi2 (13290 km2)
PERIOD OF RECORD: 01/1924 - 09/1990
GAGE ALTITUDE   : 1588.70 (484.2 m)
TOTAL PERIOD OF RECORD: 27 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8082000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19433.61	12210.04	0.15E+09	0.728	-0.84
2	27818.92	20016.91	0.40E+09	1.308	1.11
3	31748.18	22569.08	0.51E+09	1.051	0.01
4	34754.97	24109.17	0.58E+09	0.898	-0.44
5	36967.57	25531.68	0.65E+09	0.814	-0.66
6	38740.36	26482.50	0.70E+09	0.763	-0.73
7	39938.76	27084.67	0.73E+09	0.707	-0.83
8	41288.16	27912.61	0.78E+09	0.621	-1.02
9	42060.20	28247.12	0.80E+09	0.589	-1.07
10	42693.26	28574.95	0.82E+09	0.568	-1.12

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5167.	6671.	9054.	16031.	27940.	37111.	50003.	60467.	71593.	83498.
2	6467.	8470.	11731.	21796.	40311.	55482.	77886.	96894.	117820.	140958.
3	7277.	9556.	13279.	24811.	46120.	63629.	89537.	111550.	135809.	162657.
4	7777.	10352.	14559.	27500.	50907.	69652.	96744.	119222.	143508.	169862.
5	8010.	10770.	15302.	29280.	54487.	74519.	103230.	126837.	152141.	179376.
6	8268.	11198.	16018.	30853.	57356.	78157.	107622.	131555.	156948.	184001.
7	8445.	11486.	16497.	31904.	59285.	80632.	110668.	134908.	160478.	187578.
8	8532.	11674.	16874.	32932.	61524.	83796.	115066.	140239.	166723.	194726.
9	8644.	11869.	17210.	33673.	62797.	85315.	116701.	141789.	168023.	195607.
10	8775.	12055.	17487.	34219.	63768.	86573.	118305.	143629.	170073.	197842.

STATION   : 08082500   BRAZOS RIVER AT SEYMOUR, TX
LOCATION   : LATITUDE N33:34:51, LONGITUDE W099:16:02
DRAINAGE AREA   : 15538.00 mi2 (40253 km2)
PERIOD OF RECORD : 12/1923 - 09/1991
GAGE ALTITUDE   : 1238.97 (377.6 m)
TOTAL PERIOD OF RECORD: 50 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8082500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	40799.21	28605.50	0.82E+09	0.911	-0.19
2	63962.57	45979.34	0.21E+10	0.915	-0.45
3	75772.16	54108.60	0.29E+10	0.999	-0.23
4	82429.77	57236.34	0.33E+10	0.966	-0.28
5	88304.31	60091.68	0.36E+10	0.890	-0.48
6	93598.73	63645.96	0.41E+10	0.863	-0.61
7	97857.30	66597.15	0.44E+10	0.861	-0.64
8	103194.06	71689.76	0.51E+10	0.862	-0.72
9	106430.24	73702.24	0.54E+10	0.868	-0.69
10	109155.64	75211.95	0.57E+10	0.884	-0.63

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	8218.	11349.	16544.	32538.	60614.	82109.	111774.	135260.	159607.	185010.
2	13221.	17908.	25662.	49851.	94044.	129461.	180521.	222689.	268034.	316971.
3	16814.	22345.	31392.	59318.	110186.	151220.	210898.	260719.	314820.	373816.
4	18917.	25085.	35104.	65558.	119762.	162603.	223875.	274245.	328273.	386501.
5	20468.	27189.	38073.	70892.	128461.	173310.	236667.	288136.	342815.	401193.
6	21741.	28859.	40382.	75126.	136097.	183633.	250838.	305479.	363568.	425630.
7	22783.	30213.	42240.	78505.	142200.	191922.	262303.	319599.	380576.	445795.
8	23460.	31149.	43659.	81816.	150031.	204135.	281730.	345670.	414384.	488567.
9	24098.	32101.	45122.	84719.	154999.	210276.	288956.	353303.	422022.	495751.
10	24794.	33091.	46572.	87368.	159094.	214959.	293797.	357738.	425559.	497839.

STATION   : CLEAR FORK BRAZOS RIVER AT HAWLEY, TX (DISC)
LOCATION   : LATITUDE N32:35:53, LONGITUDE W099:48:53
DRAINAGE AREA : 1416.00 mi2 (3668. km2)
PERIOD OF RECORD: 10/1967 - 09/1989
GAGE ALTITUDE : 1612.45 (491.4 m)
TOTAL PERIOD OF RECORD: 22 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8083240

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	4457.49	4011.12	0.16E+08	1.265	-0.30
2	7386.18	6848.28	0.47E+08	1.375	0.17
3	9222.42	8770.89	0.77E+08	1.519	0.83
4	10343.17	9714.64	0.94E+08	1.513	0.94
5	11009.17	10485.53	0.11E+09	1.553	1.07
6	11523.61	10995.37	0.13E+09	1.555	1.06
7	12024.09	11446.81	0.13E+09	1.495	0.87
8	12380.90	11807.43	0.14E+09	1.493	0.85
9	12666.73	12114.05	0.15E+09	1.513	0.93
10	13099.32	12553.46	0.16E+09	1.483	0.81

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	931.	1160.	1552.	2925.	6137.	9451.	15523.	21806.	30011.	40651.
2	1438.	1816.	2465.	4766.	10210.	15871.	26276.	37075.	51193.	69522.
3	1644.	2119.	2941.	5883.	12874.	20140.	33388.	47053.	64776.	87622.
4	1753.	2303.	3259.	6674.	14657.	22787.	37280.	51885.	70461.	93929.
5	1835.	2412.	3417.	7028.	15563.	24338.	40113.	56139.	76652.	102733.
6	1929.	2531.	3576.	7341.	16261.	25462.	42053.	58965.	80669.	108344.
7	1958.	2584.	3676.	7628.	17026.	26733.	44242.	62073.	84941.	114065.
8	2020.	2659.	3774.	7819.	17494.	27548.	45787.	64475.	88554.	119374.
9	2086.	2736.	3871.	7984.	17851.	28143.	46888.	66180.	91123.	123170.
10	2157.	2822.	3984.	8211.	18416.	29132.	48768.	69106.	95532.	129662.

STATION   : 08084000   CLEAR FORK BRAZOS RIVER AT NUGENT, TX
LOCATION   : LATITUDE N32:41:24, LONGITUDE W099:40:09
DRAINAGE AREA   : 2199.00 mi2 (5696. km2)
PERIOD OF RECORD : 03/1924 - 09/1990
GAGE ALTITUDE   : 1531.91 (466.9 m)
TOTAL PERIOD OF RECORD: 16 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8084000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19190.95	24513.48	0.60E+09	2.510	3.24
2	33069.55	41908.27	0.18E+10	2.369	2.49
3	40438.27	51598.38	0.27E+10	2.332	2.32
4	44760.00	54703.45	0.30E+10	2.245	2.10
5	48018.85	57099.67	0.33E+10	2.175	1.93
6	50676.08	59020.01	0.35E+10	2.133	1.86
7	53064.67	61801.99	0.38E+10	2.070	1.61
8	55135.66	64341.23	0.41E+10	2.014	1.40
9	57463.03	66164.10	0.44E+10	1.955	1.21
10	59419.14	67305.48	0.45E+10	1.875	0.99

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	2214.	3100.	4716.	10951.	26747.	43602.	74615.	106413.	147443.	199727.
2	3517.	5084.	7982.	19189.	46974.	75587.	126243.	176325.	238645.	315590.
3	3903.	5803.	9374.	23391.	58144.	93423.	154704.	214159.	286643.	374587.
4	4596.	6763.	10801.	26455.	64785.	103444.	170334.	235084.	313921.	409498.
5	5015.	7371.	11754.	28680.	69915.	111330.	182748.	251674.	335397.	436669.
6	5339.	7864.	12558.	30613.	74223.	117646.	191928.	263072.	348943.	452166.
7	5408.	8011.	12876.	31760.	77838.	124020.	203401.	279708.	372057.	483326.
8	5444.	8101.	13093.	32647.	80906.	129671.	214023.	295536.	394584.	514368.
9	5601.	8419.	13730.	34471.	84972.	135129.	220427.	301466.	398524.	514216.
10	5656.	8597.	14164.	35947.	88611.	140293.	227086.	308472.	404845.	518404.

STATION : CALIFORNIA CREEK NR STAMFORD, TX
LOCATION : LATITUDE N32:55:51, LONGITUDE W099:38:32
DRAINAGE AREA : 478.00 mi2 (1238. km2)
PERIOD OF RECORD: 10/1962 - 09/1990
GAGE ALTITUDE : 1470.00 (448.0 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8084800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	5149.87	7694.61	0.59E+08	3.857	12.95
2	8003.09	9329.00	0.87E+08	2.605	6.25
3	9549.28	10434.59	0.11E+09	2.056	3.54
4	10454.03	11155.92	0.12E+09	1.795	2.26
5	11017.94	11728.34	0.14E+09	1.718	1.82
6	11324.55	11905.84	0.14E+09	1.674	1.65
7	11559.23	11975.01	0.14E+09	1.647	1.55
8	11800.82	12045.07	0.15E+09	1.608	1.42
9	12100.74	12152.13	0.15E+09	1.536	1.20
10	12365.95	12343.69	0.15E+09	1.467	0.93

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	243.	448.	894.	2902.	7879.	12413.	19208.	24830.	30772.	36958.
2	408.	761.	1530.	4934.	12958.	19886.	29740.	37511.	45414.	53324.
3	494.	916.	1830.	5884.	15550.	24016.	36242.	46021.	56081.	66269.
4	558.	1019.	2010.	6392.	16965.	26397.	40298.	51630.	63478.	75672.
5	600.	1088.	2132.	6724.	17813.	27747.	42473.	54552.	67246.	80395.
6	640.	1154.	2246.	6998.	18316.	28356.	43127.	55168.	67762.	80749.
7	706.	1249.	2384.	7222.	18620.	28730.	43682.	55952.	68866.	82302.
8	743.	1310.	2489.	7468.	19047.	29213.	44121.	56268.	68982.	82133.
9	757.	1342.	2561.	7716.	19637.	30018.	45105.	57290.	69955.	82945.
10	766.	1362.	2605.	7880.	20099.	30744.	46213.	58699.	71670.	84964.

STATION   : 08085500   CLEAR FORK BRAZOS RIVER AT FORT GRIFFIN, TX
LOCATION   : LATITUDE N32:56:04, LONGITUDE W099:13:27
DRAINAGE AREA   :   3988.00 mi2 (10331 km2)
PERIOD OF RECORD: 02/1924   - 09/1990
GAGE ALTITUDE   : 1174.09 (357.8 m)
TOTAL PERIOD OF RECORD: 16 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8085500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	18539.26	14739.24	0.22E+09	1.684	1.70
2	33831.82	26093.44	0.68E+09	1.285	0.61
3	45309.30	35493.05	0.13E+10	1.404	0.98
4	52360.55	40766.65	0.17E+10	1.455	1.05
5	56880.50	43991.03	0.19E+10	1.432	0.93
6	60300.50	46669.38	0.22E+10	1.369	0.71
7	62693.56	48999.45	0.24E+10	1.408	0.81
8	65413.15	53271.31	0.28E+10	1.580	1.27
9	67936.37	56601.32	0.32E+10	1.626	1.33
10	71097.28	59727.57	0.36E+10	1.649	1.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3027.	4435.	6866.	14670.	28496.	38867.	52724.	63308.	73927.	84620.
2	5015.	7552.	12017.	26691.	52906.	72448.	98232.	117645.	136895.	155958.
3	6399.	9788.	15801.	35755.	71304.	97517.	131630.	156947.	181761.	205963.
4	7905.	11896.	18884.	41647.	81671.	111075.	149380.	177889.	205911.	233385.
5	8903.	13259.	20835.	45315.	88289.	119985.	161537.	192676.	223456.	253869.
6	9360.	13931.	21899.	47770.	93643.	127808.	172991.	207126.	241074.	274855.
7	9711.	14428.	22655.	49434.	97242.	133109.	180870.	217186.	253483.	289813.
8	9903.	14660.	23010.	50545.	101164.	140250.	193673.	235280.	277632.	320914.
9	10121.	14955.	23473.	51806.	104869.	146585.	204527.	250320.	297457.	346234.
10	10539.	15612.	24554.	54279.	109710.	153064.	212977.	260101.	308428.	358220.

STATION   : 08086100   HUBBARD CREEK NEAR ALBANY, TEX. (DISC)
LOCATION   : LATITUDE N32:41:21, LONGITUDE W099:09:52
DRAINAGE AREA   : 454.00 mi2 (1176. km2)
PERIOD OF RECORD: 02/1962 - 10/1975
GAGE ALTITUDE   :   1224.10 (373.1 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8086100

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8216.39	6778.20	0.46E+08	0.729	-1.03
2	11757.73	10096.21	0.10E+09	1.081	-0.11
3	14138.47	13313.68	0.18E+09	1.311	0.23
4	15563.67	14478.23	0.21E+09	1.082	-0.36
5	16178.57	15206.45	0.23E+09	1.089	-0.39
6	16686.48	15787.46	0.25E+09	1.073	-0.49
7	17109.18	16233.76	0.26E+09	1.047	-0.61
8	17438.89	16516.38	0.27E+09	1.026	-0.68
9	17692.12	16728.10	0.28E+09	1.009	-0.74
10	18201.30	16899.46	0.29E+09	0.981	-0.81

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	756.	1251.	2211.	5869.	13492.	19744.	28507.	35409.	42465.	49623.
2	970.	1646.	2989.	8259.	19499.	28786.	41806.	52031.	62451.	72953.
3	1057.	1775.	3223.	9153.	23063.	35689.	55000.	71431.	89249.	108504.
4	1082.	1842.	3399.	9916.	25558.	39956.	62180.	81221.	101965.	124465.
5	1099.	1876.	3475.	10217.	26547.	41683.	65177.	85397.	107503.	131563.
6	1117.	1909.	3541.	10457.	27345.	43109.	67725.	89026.	112409.	137970.
7	1224.	2041.	3698.	10632.	27693.	43931.	69901.	92928.	118764.	147640.
8	1301.	2141.	3829.	10830.	28052.	44553.	71190.	95047.	122075.	152560.
9	1332.	2188.	3904.	11004.	28435.	45123.	72056.	96181.	123519.	154360.
10	1504.	2418.	4216.	11487.	29074.	45862.	73034.	97496.	125385.	157035.

STATION   : 08086212   HUBBARD CREEK BELOW ALBANY, TX
LOCATION   : LATITUDE N32:43:58, LONGITUDE W099:08:25, HYDROLOGICAL UNIT 12
DRAINAGE AREA   : 613.00 mi2 (1588. km2)
PERIOD OF RECORD: 10/1966 - 09/1991
GAGE ALTITUDE   : 1184.99 (361.1 m)
TOTAL PERIOD OF RECORD: 24 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8086212

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	18642.56	38611.98	0.15E+10	3.985	12.42
2	24060.58	43003.41	0.18E+10	3.342	8.99
3	26710.97	45364.39	0.21E+10	2.999	7.18
4	27680.77	45778.16	0.21E+10	2.906	6.78
5	28175.83	46060.21	0.21E+10	2.853	6.53
6	28841.77	46406.54	0.22E+10	2.770	6.17
7	29178.13	46572.46	0.22E+10	2.735	6.00
8	29953.11	46984.02	0.22E+10	2.641	5.59
9	30244.98	47108.28	0.22E+10	2.614	5.48
10	30747.41	47266.00	0.22E+10	2.573	5.30

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	280.	531.	1153.	5067.	22216.	48042.	109225.	185599.	298639.	462277.
2	356.	694.	1548.	7011.	30849.	66109.	147758.	247235.	391245.	595003.
3	392.	764.	1704.	7760.	34530.	74610.	168505.	284126.	453020.	694096.
4	411.	804.	1796.	8185.	36292.	78147.	175648.	295060.	468674.	715329.
5	419.	822.	1841.	8405.	37188.	79859.	178785.	299369.	473957.	720958.
6	427.	839.	1886.	8638.	38268.	82166.	183813.	307534.	486417.	739120.
7	445.	871.	1950.	8859.	38874.	83013.	184570.	307518.	484518.	733551.
8	457.	898.	2015.	9168.	40167.	85588.	189683.	315210.	495300.	747799.
9	467.	918.	2060.	9352.	40767.	86540.	190871.	316052.	494883.	744575.
10	490.	965.	2167.	9776.	41960.	88015.	191179.	312971.	484589.	721004.

STATION   : 08086500   HUBBARD CREEK NR BRECKENRIDGE, TX (DISC)
LOCATION   : LATITUDE N32:50:13, LONGITUDE W098:56:52
DRAINAGE AREA   : 1089.00 mi2 (2821. km2)
PERIOD OF RECORD: 05/1955 - 09/1986
GAGE ALTITUDE   : 1092.10 (332.8 m)
TOTAL PERIOD OF RECORD: 8 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8086500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19740.50	11525.77	0.13E+09	0.484	-1.36
2	28442.98	18688.43	0.35E+09	1.314	-0.45
3	33238.51	25660.20	0.66E+09	1.755	0.08
4	36803.80	32940.24	0.11E+10	2.140	0.65
5	38056.36	34804.41	0.12E+10	2.170	0.70
6	39074.39	36850.40	0.14E+10	2.230	0.79
7	39462.15	37283.81	0.14E+10	2.231	0.80
8	39962.98	38142.03	0.15E+10	2.244	0.81
9	41873.41	43033.43	0.19E+10	2.361	0.99
10	43491.92	47282.79	0.22E+10	2.437	1.10

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	4991.	6760.	9560.	17439.	29455.	37611.	47794.	55170.	62296.	69238.
2	7931.	10117.	13572.	23719.	41259.	54994.	74606.	90785.	108221.	127133.
3	8699.	10879.	14418.	25613.	47679.	67320.	98692.	127381.	161205.	200954.
4	9043.	11131.	14608.	26282.	51842.	76842.	120517.	163895.	218639.	287386.
5	9091.	11223.	14789.	26862.	53626.	80064.	126653.	173271.	232466.	307232.
6	9166.	11287.	14855.	27093.	54813.	82703.	132786.	183703.	249279.	333196.
7	9207.	11352.	14962.	27345.	55394.	83612.	134256.	185721.	251968.	336704.
8	9287.	11428.	15040.	27494.	55966.	84834.	137081.	190550.	259816.	348938.
9	9416.	11446.	14939.	27386.	57565.	89876.	151430.	217569.	306784.	426279.
10	9515.	11454.	14850.	27278.	58809.	94016.	163771.	241612.	349953.	499753.

STATION   : 08087300   CLEAR FORK BRAZOS RIVER AT ELIASVILLE, TX (DISC)
LOCATION   : LATITUDE N32:57:36, LONGITUDE WO98:45:59
DRAINAGE AREA   : 5697.00 mi2 (14759 km2)
PERIOD OF RECORD: 12/1915 - 10/1982
GAGE ALTITUDE   : 1027.77 (313.2 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8087300

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	21666.81	10941.43	0.12E+09	0.128	-1.13
2	38596.57	21915.16	0.48E+09	0.173	-1.31
3	50289.66	30242.75	0.91E+09	0.217	-1.27
4	60198.35	36008.30	0.13E+10	0.200	-1.11
5	68250.30	42273.19	0.18E+10	0.439	-0.57
6	74329.23	48260.27	0.23E+10	0.763	0.17
7	79707.66	54902.89	0.30E+10	1.073	0.79
8	83118.93	59749.38	0.36E+10	1.305	1.34
9	85991.94	62601.71	0.39E+10	1.360	1.53
10	88594.15	64831.98	0.42E+10	1.366	1.56

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5570.	7808.	11283.	20347.	31878.	38324.	45055.	49173.	52633.	55584.
2	7916.	11574.	17574.	34652.	58912.	73681.	90086.	100686.	109993.	118194.
3	9073.	13566.	21159.	43852.	78172.	100107.	125349.	142168.	157301.	170881.
4	10145.	15565.	24864.	52902.	94634.	120480.	149282.	167831.	184004.	198191.
5	10671.	16699.	27219.	59583.	108328.	138504.	171959.	193337.	211817.	227930.
6	10948.	17333.	28626.	64072.	118679.	153017.	191488.	216286.	237863.	256773.
7	11090.	17668.	29444.	67288.	127727.	166984.	212123.	241940.	268427.	291999.
8	11213.	17894.	29931.	69147.	133269.	175855.	225731.	259251.	289469.	316658.
9	11305.	18130.	30494.	71130.	138221.	183078.	235851.	271447.	303624.	332636.
10	11551.	18524.	31177.	72946.	142482.	189358.	244886.	282587.	316856.	347883.

STATION   : 08088000   BRAZOS RIVER NR SOUTH BEND, TX
LOCATION   : LATITUDE N33:01:27, LONGITUDE W098:38:37
DRAINAGE AREA   : 22673.00 mi2 (58738 km2)
PERIOD OF RECORD: 10/1938 - 09/1990
GAGE ALTITUDE   : 1002.98 (305.7 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8088000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	53482.14	37436.57	0.14E+10	1.534	1.71
2	96643.35	68092.70	0.46E+10	1.377	1.05
3	127734.70	94704.07	0.90E+10	1.487	1.20
4	151658.48	115040.50	0.13E+11	1.497	1.07
5	170930.09	131872.56	0.17E+11	1.528	1.04
6	186956.17	147206.02	0.22E+11	1.595	1.20
7	197510.45	157681.58	0.25E+11	1.665	1.42
8	205494.16	165826.36	0.27E+11	1.741	1.69
9	213110.28	175166.52	0.31E+11	1.825	2.01
10	220367.55	181129.92	0.33E+11	1.835	2.12

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	9992.	14800.	22836.	46436.	81392.	103402.	128469.	145029.	159832.	173050.
2	16717.	25253.	39767.	83307.	148772.	190124.	237140.	268073.	295583.	320064.
3	21189.	31983.	50495.	107374.	196855.	255958.	325854.	373554.	417296.	457275.
4	24371.	36981.	58749.	126354.	234134.	306030.	391693.	450518.	504717.	554474.
5	27159.	41248.	65618.	141648.	263738.	345703.	443916.	511696.	574397.	632184.
6	29674.	44863.	71120.	153463.	287702.	379355.	491029.	569295.	642630.	711095.
7	32358.	48165.	75282.	160388.	301883.	401078.	525395.	614841.	700523.	782314.
8	34745.	51010.	78749.	165636.	312065.	416781.	550856.	649341.	745269.	838624.
9	35997.	52616.	80990.	170245.	322782.	433570.	577537.	684789.	790393.	894511.
10	37176.	54349.	83678.	175978.	333826.	448530.	597647.	708774.	818222.	926162.

STATION   : 08089000   BRAZOS RIVER NR PALO PINTO, TX
LOCATION   : LATITUDE N32:51:45, LONGITUDE W098:18:08
DRAINAGE AREA   : 23811.00 mi2 (61686 km2)
PERIOD OF RECORD : 02/1924 - 09/1990
GAGE ALTITUDE   : 831.23 (253.3 m)
TOTAL PERIOD OF RECORD: 17 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8089000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	62139.82	31640.36	0.10E+10	1.035	0.60
2	109225.09	54364.22	0.30E+10	0.825	0.25
3	143479.66	66336.46	0.44E+10	0.291	-0.52
4	168784.08	75048.52	0.56E+10	0.148	-0.62
5	190748.11	82735.31	0.68E+10	0.024	-0.70
6	208170.66	90846.66	0.83E+10	-.032	-0.80
7	221657.34	100043.63	0.10E+11	0.083	-0.78
8	232807.97	107013.03	0.11E+11	0.164	-0.69
9	241907.31	111857.03	0.13E+11	0.195	-0.61
10	251099.30	116626.98	0.14E+11	0.215	-0.59

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	18072.	24829.	34983.	59899.	88915.	103902.	118617.	127106.	133903.	139471.
2	29534.	42207.	61554.	108004.	157379.	179883.	199493.	209510.	216716.	222000.
3	38004.	55562.	82437.	145269.	206478.	231410.	250944.	259797.	265612.	269423.
4	45071.	66605.	99421.	173915.	241001.	265751.	283398.	299290.	295092.	297714.
5	50619.	75746.	114038.	199184.	271023.	295262.	311030.	333867.	320351.	322148.
6	53764.	81209.	123335.	217575.	296954.	323509.	340606.	363715.	350582.	352483.
7	56023.	84459.	128450.	229224.	318794.	350800.	372785.	400630.	386681.	389598.
8	57961.	87488.	133365.	239629.	336181.	371593.	396542.	422569.	412806.	416369.
9	59692.	90309.	137997.	248828.	349883.	387035.	413255.	440344.	430376.	434134.
10	62546.	93963.	142783.	256904.	363457.	403961.	433524.	455308.	453610.	458246.

STATION : 08090500 PALO PINTO CR NR SANTO, TEX.(DISC)
LOCATION : LATITUDE N32:37:51, LONGITUDE W098:10:50
DRAINAGE AREA : 573.00 mi2 (1484. km2)
PERIOD OF RECORD: 10/1924 - 09/1976
GAGE ALTITUDE : 762.63 (232.4 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8090500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	17837.51	14994.68	0.22E+09	1.351	-0.07
2	25454.04	21423.44	0.46E+09	1.074	-0.57
3	27839.54	24350.85	0.59E+09	1.251	-0.22
4	29998.48	27837.65	0.77E+09	1.348	-0.22
5	30942.76	29177.14	0.85E+09	1.382	-0.19
6	31384.12	29566.62	0.87E+09	1.389	-0.18
7	31896.02	29694.91	0.88E+09	1.372	-0.21
8	32396.46	29987.62	0.90E+09	1.318	-0.32
9	33083.35	31004.46	0.96E+09	1.335	-0.29
10	33442.06	31555.94	0.10E+10	1.362	-0.23

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2633.	3856.	6016.	13318.	27533.	39168.	55957.	69711.	84310.	99858.
2	3229.	4856.	7815.	18310.	39941.	58362.	85717.	108655.	133430.	160223.
3	3389.	5114.	8272.	19643.	43612.	64419.	95820.	122534.	151730.	183644.
4	3434.	5166.	8367.	20224.	46593.	70659.	108664.	142363.	180506.	223550.
5	3514.	5271.	8518.	20617.	47864.	73066.	113360.	149516.	190851.	237954.
6	3612.	5405.	8711.	20978.	48487.	73861.	114354.	150636.	192072.	239251.
7	3760.	5622.	9041.	21607.	49337.	74543.	114264.	149441.	189234.	234127.
8	3807.	5694.	9160.	21918.	50145.	75860.	116462.	152484.	193294.	239397.
9	3834.	5725.	9208.	22119.	51072.	77805.	120520.	158850.	202682.	252658.
10	3863.	5762.	9260.	22257.	51541.	78721.	122357.	161695.	206853.	258536.

STATION   : 08091000   BRAZOS RIVER NR GLEN ROSE, TX
LOCATION   : LATITUDE N32:16:18, LONGITUDE W097:39:48
DRAINAGE AREA   : 25818.00 mi2 (66886   km2)
PERIOD OF RECORD: 10/1923 - 09/1990
GAGE ALTITUDE   : 567.82 (173.0 m)
TOTAL PERIOD OF RECORD: 17 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8091000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	72276.52	31586.03	0.10E+10	0.308	-0.38
2	126077.60	58224.88	0.34E+10	0.568	-0.22
3	165912.70	78524.58	0.62E+10	0.648	-0.24
4	194290.36	90809.00	0.82E+10	0.693	-0.07
5	217964.81	101212.98	0.10E+11	0.633	-0.16
6	238310.58	108992.16	0.12E+11	0.583	-0.17
7	254933.20	116958.00	0.14E+11	0.556	-0.24
8	268032.31	124011.91	0.15E+11	0.550	-0.31
9	280375.19	130422.69	0.17E+11	0.572	-0.31
10	291630.47	136105.33	0.19E+11	0.600	-0.28

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	18133.	28450.	44302.	77851.	101275.	107248.	110226.	111052.	111398.	111537.
2	31659.	48755.	75081.	133065.	178841.	192770.	200878.	204632.	205009.	205699.
3	41951.	63774.	97430.	173013.	236558.	257670.	271154.	288370.	278941.	280411.
4	49899.	75884.	115711.	203785.	275401.	298257.	312293.	325567.	320010.	321405.
5	55421.	84818.	129957.	229438.	308905.	333584.	348293.	358291.	356055.	357400.
6	61204.	93675.	143345.	251787.	336616.	362254.	377093.	383335.	384599.	385843.
7	65467.	99909.	152647.	268494.	360801.	389440.	406509.	418152.	415517.	417079.
8	68529.	104353.	159340.	281173.	380439.	412164.	431668.	450254.	442403.	444345.
9	71393.	108776.	166235.	293871.	398338.	431896.	452628.	473244.	464113.	466202.
10	74579.	113276.	172719.	305068.	414475.	450130.	472490.	497648.	485119.	487458.

STATION : 08091500   PALUXY RIVER AT GLEN ROSE, TX
LOCATION : LATITUDE N32:13:53, LONGITUDE WO97:46:37
DRAINAGE AREA : 410.00 mi2 (1062. km2)
PERIOD OF RECORD: 01/1924 - 09/1990
GAGE ALTITUDE : 609.66 (185.8 m)
TOTAL PERIOD OF RECORD: 35 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8091500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10611.80	11844.69	0.14E+09	2.012	3.06
2	13630.30	13564.16	0.18E+09	1.764	2.57
3	14700.64	14168.22	0.20E+09	1.658	2.23
4	15583.45	14630.43	0.21E+09	1.541	1.84
5	16243.44	15043.37	0.23E+09	1.472	1.55
6	16740.84	15232.60	0.23E+09	1.447	1.48
7	17324.32	15455.91	0.24E+09	1.375	1.28
8	18039.63	16093.77	0.26E+09	1.298	0.91
9	18530.69	16372.53	0.27E+09	1.258	0.78
10	18883.73	16533.20	0.27E+09	1.238	0.70

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	965.	1480.	2463.	6333.	15716.	24904.	40275.	54621.	71532.	91363.
2	1428.	2159.	3524.	8694.	20575.	31727.	49760.	66094.	84902.	106475.
3	1677.	2481.	3960.	9474.	22077.	33981.	53415.	71229.	91971.	116047.
4	1825.	2689.	4270.	10135.	23455.	35988.	56398.	75075.	96795.	121982.
5	1926.	2837.	4502.	10648.	24498.	37436.	58376.	77428.	99482.	124940.
6	2003.	2967.	4727.	11169.	25405.	38428.	59100.	77558.	98590.	122495.
7	2045.	3058.	4915.	11697.	26500.	39821.	60625.	78899.	99430.	122445.
8	2073.	3116.	5038.	12109.	27654.	41699.	63687.	83031.	104786.	129192.
9	2112.	3192.	5187.	12519.	28523.	42853.	65077.	84454.	106069.	130140.
10	2174.	3292.	5354.	12887.	29127.	43493.	65523.	84530.	105546.	128760.

STATION   : 08093500   AQUILLA CREEK NR AQUILLA, TX
LOCATION   : LATITUDE N31:50:40, LONGITUDE W097:12:04
DRAINAGE AREA   : 308.00 mi2 (797.9 km2)
PERIOD OF RECORD: 01/1939 - 09/1990
GAGE ALTITUDE   : 451.48 (137.6 m)
TOTAL PERIOD OF RECORD: 41 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8093500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14412.58	9361.34	0.88E+08	0.819	-0.41
2	21667.49	14663.87	0.22E+09	0.882	-0.22
3	24808.29	17542.89	0.31E+09	0.853	-0.38
4	26929.95	19851.11	0.39E+09	1.125	0.69
5	28526.12	21053.64	0.44E+09	1.183	1.05
6	29913.49	21892.91	0.48E+09	1.070	0.58
7	31769.03	23824.76	0.57E+09	0.998	0.07
8	32820.59	24806.68	0.62E+09	0.998	-0.08
9	33356.70	25222.28	0.64E+09	1.003	-0.10
10	33972.21	25836.20	0.67E+09	1.035	0.06

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3203.	4394.	6332.	12032.	21323.	27986.	36683.	43230.	49739.	56277.
2	4256.	6020.	8951.	17834.	32589.	43200.	56983.	67283.	77460.	87572.
3	4427.	6351.	9616.	19848.	37634.	50879.	68553.	82066.	95644.	109371.
4	4633.	6683.	10187.	21295.	40889.	55639.	75481.	90754.	106176.	121842.
5	4805.	6994.	10746.	22656.	43479.	58961.	79518.	95142.	110763.	126441.
6	4984.	7283.	11229.	23782.	45701.	61945.	83433.	99702.	115920.	132136.
7	5068.	7425.	11513.	24754.	48601.	66763.	91352.	110360.	129604.	149178.
8	5496.	7889.	12007.	25305.	49699.	68785.	95378.	116523.	138447.	161315.
9	5631.	8065.	12246.	25725.	50441.	69796.	96797.	118298.	140624.	163942.
10	5728.	8190.	12419.	26090.	51321.	71214.	99144.	121522.	144882.	169397.

STATION : 08095000   NORTH BOSQUE RIVER NR CLIFTON, TX
LOCATION : LATITUDE N31:47:09, LONGITUDE WO97:34:04
DRAINAGE AREA : 968.00 mi2 (2507. km2)
PERIOD OF RECORD: 10/1923 - 09/1990
GAGE ALTITUDE : 605.43 (184.5 m)
TOTAL PERIOD OF RECORD: 44 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8095000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22589.93	15511.58	0.24E+09	0.676	-0.73
2	29693.06	20078.55	0.40E+09	0.593	-0.88
3	32214.10	21422.72	0.46E+09	0.603	-0.86
4	35076.47	24746.38	0.61E+09	0.875	-0.16
5	37475.66	28213.60	0.80E+09	1.377	1.92
6	38871.64	29322.30	0.86E+09	1.433	2.25
7	40623.69	31983.79	0.10E+10	1.778	4.06
8	42081.00	34569.72	0.12E+10	2.121	5.88
9	43182.08	36064.99	0.13E+10	2.209	6.35
10	44211.14	37241.64	0.14E+10	2.233	6.45

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3657.	5471.	8597.	18467.	34953.	46532.	61048.	71491.	81489.	91028.
2	4891.	7284.	11393.	24321.	45889.	61054.	80107.	93844.	107026.	119630.
3	5512.	8187.	12745.	26819.	49601.	65197.	84342.	97871.	110645.	122673.
4	5831.	8631.	13428.	28517.	53876.	71883.	94744.	111389.	127490.	143015.
5	6066.	8974.	13984.	29932.	57382.	77326.	103173.	122355.	141178.	159639.
6	6274.	9307.	14533.	31147.	59559.	80047.	106401.	125820.	144771.	163232.
7	6380.	9484.	14864.	32143.	62195.	84189.	112838.	134188.	155201.	175868.
8	6483.	9647.	15152.	32956.	64301.	87492.	117984.	140899.	163599.	186084.
9	6561.	9771.	15372.	33588.	65957.	90107.	122088.	146278.	170356.	194338.
10	6710.	9965.	15648.	34183.	67421.	92468.	125952.	151506.	177117.	202833.

STATION   : 08095200   NORTH BOSQUE RIVER AT VALLEY MILLS, TX
LOCATION   : LATITUDE N31:40:10, LONGITUDE W097:28:09
DRAINAGE AREA   : 1146.00 mi2 (2968. km2)
PERIOD OF RECORD: 10/1959 - 09/1990
GAGE ALTITUDE   : 524.55 (159.8 m)
TOTAL PERIOD OF RECORD: 8 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8095200

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	37978.52	35506.77	0.13E+10	1.070	-1.01
2	51897.77	49378.23	0.24E+10	1.110	-1.05
3	55368.85	50336.61	0.25E+10	1.001	-1.16
4	60015.87	53987.24	0.29E+10	0.875	-1.41
5	62048.19	55168.48	0.30E+10	0.848	-1.44
6	65840.84	56024.50	0.31E+10	0.673	-1.53
7	70258.02	57361.46	0.33E+10	0.456	-1.63
8	73229.02	59622.97	0.36E+10	0.419	-1.66
9	75359.51	61123.75	0.37E+10	0.400	-1.66
10	77246.53	62871.48	0.40E+10	0.409	-1.65

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	2695.	4635.	8608.	25167.	64046.	98947.	151499.	195479.	242523.	292496.
2	3744.	6351.	11669.	33835.	86843.	135567.	210751.	275165.	345357.	421538.
3	4127.	7084.	13089.	37684.	93668.	142552.	214378.	273182.	335031.	399539.
4	4357.	7537.	14031.	40826.	102018.	155398.	233607.	297416.	364333.	433840.
5	4520.	7866.	14699.	42776.	105861.	159887.	237616.	299946.	364429.	430356.
6	4582.	8190.	15674.	46567.	114187.	169937.	246865.	306158.	365509.	424131.
7	4589.	8432.	16558.	50519.	123877.	182745.	261360.	320055.	377209.	432090.
8	4626.	8576.	16997.	52524.	129705.	191676.	274261.	335749.	395451.	452589.
9	4677.	8730.	17417.	54204.	133926.	197540.	281649.	343784.	403698.	460628.
10	4712.	8831.	17693.	55412.	137487.	203089.	289863.	353961.	415750.	474430.

STATION   : 08096500   BRAZOS RIVER AT WACO, TX
LOCATION   : LATITUDE N31:32:06, LONGITUDE W097:04:22
DRAINAGE AREA   : 29573.00 mi2 (76613 km2)
PERIOD OF RECORD: 10/1898 - 09/1990
GAGE ALTITUDE   : 349.34 (106.4 m)
TOTAL PERIOD OF RECORD: 42 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8096500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	111258.57	76163.64	0.58E+10	1.137	0.14
2	191710.08	143624.78	0.21E+11	1.348	0.66
3	249703.92	188277.45	0.35E+11	1.378	0.70
4	295193.44	220508.31	0.49E+11	1.385	0.75
5	329122.56	239207.61	0.57E+11	1.360	0.78
6	358653.66	256822.22	0.66E+11	1.353	0.82
7	385315.34	273440.66	0.75E+11	1.310	0.67
8	406560.09	284706.19	0.81E+11	1.266	0.51
9	424809.94	294504.09	0.87E+11	1.261	0.56
10	440972.06	302314.00	0.91E+11	1.244	0.53

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	30733.	38516.	50889.	88221.	156307.	212767.	297666.	371003.	453582.	546457.
2	50391.	62769.	82756.	145405.	267320.	374751.	544963.	699522.	880748.	1092601.
3	65551.	81649.	107650.	189188.	347990.	488029.	710044.	911769.	1148409.	1425177.
4	78473.	97668.	128588.	225039.	411344.	574478.	831593.	1063894.	1335243.	1651244.
5	89373.	111320.	146468.	254725.	459427.	635237.	907852.	1150152.	1429753.	1751275.
6	100168.	124077.	162230.	279136.	499070.	687471.	979142.	1238296.	1537197.	1880938.
7	109153.	134762.	175572.	300423.	535166.	736371.	1048119.	1325550.	1645848.	2014712.
8	116365.	143587.	186868.	318672.	564717.	774305.	1097379.	1383459.	1712515.	2090034.
9	121695.	150549.	196333.	335018.	591254.	807331.	1137527.	1427217.	1758190.	2135170.
10	126778.	157126.	205176.	349923.	614652.	835710.	1170691.	1462052.	1792779.	2166962.

STATION : BRAZOS RIVER NEAR MARLIN, TEX (DISC)
LOCATION : LATITUDE N31:17:18, LONGITUDE W096:58:10
DRAINAGE AREA : 30211.00 mi2 (78266 km2)
PERIOD OF RECORD: 10/1938 - 09/1951
GAGE ALTITUDE : 312.15 (95.14 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8097500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	102606.50	71099.97	0.51E+10	0.770	-1.26
2	184513.17	139154.09	0.19E+11	0.926	-1.05
3	242247.47	183279.69	0.34E+11	0.924	-0.99
4	281053.28	208049.86	0.43E+11	0.851	-1.12
5	310085.22	223358.50	0.50E+11	0.841	-1.13
6	331865.22	232406.63	0.54E+11	0.841	-1.13
7	352137.88	244980.38	0.60E+11	0.903	-1.00
8	369441.34	256354.55	0.66E+11	0.980	-0.83
9	384119.06	262871.63	0.69E+11	0.990	-0.77
10	400681.00	269756.63	0.73E+11	0.987	-0.74

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	24339.	31689.	43663.	80816.	150025.	207545.	293609.	367532.	449816.	541714.
2	38909.	51367.	72105.	139155.	271459.	386715.	565884.	724859.	906732.	1114751.
3	49194.	65662.	93231.	182695.	358877.	511245.	746078.	952789.	1187135.	1453299.
4	58823.	78155.	110351.	213922.	415656.	588731.	853863.	1086072.	1348312.	1645114.
5	68820.	90581.	126449.	239880.	456181.	638955.	915785.	1155974.	1425322.	1728214.
6	79176.	102729.	141087.	260372.	483920.	671083.	953100.	1196850.	1469881.	1776350.
7	87231.	112211.	152655.	277577.	510464.	705281.	999099.	1253337.	1538821.	1859748.
8	94756.	120775.	162706.	291735.	532205.	734146.	1040240.	1306336.	1606865.	1946129.
9	101196.	128401.	172044.	305380.	551690.	757270.	1067483.	1336157.	1638797.	1979581.
10	107843.	136536.	182370.	321216.	574581.	783880.	1097034.	1366296.	1667715.	2005304.

STATION   : 08099500   LEON RIVER NR HASSE, TX
LOCATION   : LATITUDE N31:57:28, LONGITUDE W098:27:32
DRAINAGE AREA   : 1261.00 mi2 (3266. km2)
PERIOD OF RECORD: 01/1939 - 09/1990
GAGE ALTITUDE   : 1115.01 (339.8 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8099500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	14439.67	11846.49	0.14E+09	0.540	-1.17
2	23744.53	17784.94	0.32E+09	0.117	-1.88
3	29783.80	21534.54	0.46E+09	0.022	-2.00
4	32993.59	23211.52	0.54E+09	-.004	-2.01
5	34644.23	24069.83	0.58E+09	-.011	-2.01
6	35747.97	24537.71	0.60E+09	-.012	-2.00
7	36586.05	24745.32	0.61E+09	-.013	-1.99
8	37871.61	25856.88	0.67E+09	0.041	-1.92
9	39531.24	27858.15	0.78E+09	0.274	-1.56
10	40786.65	29668.79	0.88E+09	0.524	-1.09

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1462.	2269.	3801.	9671.	23061.	35385.	54851.	72057.	91429.	113177.
2	2798.	4274.	7003.	16927.	37939.	56140.	83475.	106593.	131706.	159003.
3	3861.	5813.	9358.	21859.	47321.	68759.	100259.	126418.	154434.	184504.
4	4612.	6872.	10920.	24828.	52182.	74591.	106811.	133068.	160770.	190108.
5	4953.	7378.	11703.	26405.	54783.	77630.	109973.	135959.	163046.	191420.
6	5271.	7823.	12348.	27552.	56413.	79335.	111424.	136953.	163359.	190817.
7	5694.	8356.	13027.	28486.	57406.	80192.	111955.	137156.	163184.	190228.
8	5854.	8593.	13402.	29369.	59404.	83192.	116504.	143047.	170560.	199241.
9	6139.	8949.	13874.	30298.	61681.	86989.	123069.	152318.	183104.	215644.
10	6358.	9215.	14215.	30950.	63328.	89817.	128121.	159598.	193130.	228963.

STATION : 08100500 LEON RIVER AT GATESVILLE, TX
LOCATION : LATITUDE N31:25:58, LONGITUDE W097:45:42
DRAINAGE AREA : 2342.00 mi2 (6067. km2)
PERIOD OF RECORD: 10/1950 - 09/1990
GAGE ALTITUDE : 723.85 (220.6 m)
TOTAL PERIOD OF RECORD: 9 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 810500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12597.25	9846.15	0.97E+08	1.371	-0.21
2	21313.06	17125.22	0.29E+09	1.206	-0.63
3	28711.85	23621.32	0.56E+09	1.151	-0.78
4	33824.14	27694.89	0.77E+09	1.182	-0.69
5	38830.64	31915.98	0.10E+10	1.150	-0.72
6	44632.07	38156.09	0.15E+10	1.253	-0.55
7	48984.02	43329.05	0.19E+10	1.369	-0.38
8	52354.16	47328.91	0.22E+10	1.494	-0.13
9	55226.45	50663.25	0.26E+10	1.620	0.10
10	57689.48	54352.61	0.30E+10	1.758	0.35

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2456.	3340.	4828.	9651.	19006.	26916.	38840.	49102.	60507.	73213.
2	3956.	5364.	7762.	15773.	32133.	46656.	69488.	89916.	113365.	140300.
3	4938.	6782.	9965.	20827.	43580.	64131.	96842.	126410.	160596.	200132.
4	5834.	8028.	11813.	24679.	51415.	75364.	113200.	147160.	186186.	231064.
5	6348.	8862.	13234.	28229.	59500.	87419.	131299.	170424.	215110.	266162.
6	6765.	9546.	14449.	31657.	68631.	102386.	156358.	205190.	261594.	326704.
7	7183.	10135.	15372.	34029.	75111.	113467.	175991.	233577.	301064.	380064.
8	7618.	10726.	16246.	36019.	80017.	121538.	189884.	253404.	328433.	416901.
9	8326.	11587.	17344.	37874.	83682.	127280.	199778.	267798.	348988.	445532.
10	8736.	12083.	17986.	39120.	86818.	132841.	210412.	284079.	373061.	479930.

STATION : COWHOUSE CREEK AT PIDCOKE, TX
LOCATION : LATITUDE N31:17:05, LONGITUDE W097:53:05
DRAINAGE AREA : 455.00 mi2 (1178. km2)
PERIOD OF RECORD: 10/1950 - 09/1990
GAGE ALTITUDE : 736.71 (224.5 m)
TOTAL PERIOD OF RECORD: 40 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8101000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12464.58	14469.44	0.21E+09	2.526	5.72
2	15028.46	16286.31	0.27E+09	2.271	4.34
3	16539.61	17740.58	0.31E+09	2.246	4.18
4	17464.86	18791.03	0.35E+09	2.325	4.59
5	18174.16	19407.92	0.38E+09	2.368	4.94
6	18855.84	19894.44	0.40E+09	2.363	5.09
7	19656.54	20189.95	0.41E+09	2.321	5.03
8	20786.33	21639.13	0.47E+09	2.302	4.98
9	21302.93	22383.92	0.50E+09	2.382	5.47
10	21710.43	22883.76	0.52E+09	2.441	5.85

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	389.	900.	2194.	8455.	21461.	30221.	39735.	45424.	49971.	53600.
2	522.	1203.	2909.	10826.	26056.	35562.	45221.	50657.	54774.	57902.
3	569.	1320.	3210.	12000.	28799.	39175.	49599.	55399.	59746.	63013.
4	603.	1407.	3435.	12815.	30419.	41054.	51509.	57204.	61385.	64464.
5	623.	1461.	3582.	13411.	31786.	42808.	53558.	59367.	63595.	66683.
6	640.	1509.	3717.	13981.	33120.	44532.	55591.	61525.	65820.	68937.
7	661.	1578.	3925.	14832.	34793.	46392.	57365.	63101.	67185.	70089.
8	670.	1602.	4005.	15372.	36820.	49657.	62097.	68761.	73579.	77068.
9	680.	1628.	4074.	15690.	37732.	50990.	63891.	70828.	75856.	79507.
10	692.	1660.	4159.	16018.	38466.	51926.	64987.	71990.	77055.	80725.

STATION : 08102500 LEON RIVER NR BELTON, TX
LOCATION : LATITUDE N31:04:12, LONGITUDE W097:26:28
DRAINAGE AREA : 3542.00 mi2 (9176. km2)
PERIOD OF RECORD: 10/1923 - 09/1990
GAGE ALTITUDE : 476.68 (145.2 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8102500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	25380.75	19666.55	0.39E+09	1.711	2.12
2	41364.84	31294.61	0.98E+09	1.322	0.65
3	54486.40	40105.10	0.16E+10	1.220	0.35
4	65270.65	48157.32	0.23E+10	1.210	0.31
5	74168.40	53734.17	0.29E+10	1.180	0.35
6	80934.33	58060.34	0.34E+10	1.165	0.37
7	86885.96	61703.68	0.38E+10	1.143	0.34
8	92659.98	64961.42	0.42E+10	1.113	0.27
9	98236.60	69306.72	0.48E+10	1.168	0.45
10	102612.12	72489.25	0.53E+10	1.188	0.52

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5398.	7280.	10375.	19920.	37096.	50696.	70119.	86028.	103025.	121259.
2	7687.	10824.	16111.	32663.	62005.	84461.	115291.	139531.	164470.	190307.
3	10223.	14467.	21606.	43708.	81912.	110399.	148576.	177918.	207527.	237650.
4	12588.	17595.	25975.	51951.	97545.	132248.	179748.	217023.	255334.	294996.
5	14375.	20142.	29788.	59525.	111091.	149847.	202279.	242969.	284391.	326901.
6	15784.	22124.	32716.	65253.	121290.	163131.	219403.	262833.	306837.	351807.
7	17088.	23957.	35410.	70430.	130229.	174519.	233658.	279001.	324687.	371136.
8	18468.	25881.	38199.	75626.	138819.	185155.	246497.	293170.	339927.	387167.
9	19836.	27647.	40606.	79957.	146749.	196088.	261912.	312374.	363234.	414973.
10	20878.	29025.	42522.	83470.	153056.	204585.	273522.	326523.	380088.	434713.

STATION   : 08103800   LAMPASAS RIVER NR KEMPNER, TX
LOCATION   : LATITUDE N31:04:54, LONGITUDE W098:00:59
DRAINAGE AREA   : 818.00 mi2 (2119. km2)
PERIOD OF RECORD : 10/1962 - 09/1990
GAGE ALTITUDE   : 828.38 (252.4 m)
TOTAL PERIOD OF RECORD: 26 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8103800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10844.86	14408.45	0.21E+09	3.403	10.25
2	14230.49	19714.14	0.39E+09	3.553	10.98
3	16433.59	22414.39	0.50E+09	3.354	9.90
4	18044.25	24217.94	0.59E+09	3.233	9.25
5	19532.84	25469.48	0.65E+09	3.057	8.35
6	20798.53	27144.96	0.74E+09	3.039	8.23
7	21970.68	28231.57	0.80E+09	2.961	7.85
8	23064.95	29409.90	0.86E+09	2.947	7.79
9	24160.83	30932.36	0.96E+09	2.986	8.00
10	25432.98	32366.20	0.10E+10	2.872	7.28

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	469.	910.	1901.	6464.	17414.	26837.	40057.	50318.	60593.	70708.
2	620.	1190.	2463.	8315.	22523.	34953.	52710.	66731.	80978.	95210.
3	682.	1314.	2736.	9390.	26034.	40978.	62825.	80427.	98603.	117041.
4	736.	1420.	2966.	10257.	28687.	45376.	69953.	89876.	110549.	131616.
5	813.	1555.	3220.	11068.	31120.	49543.	77107.	99785.	123609.	148189.
6	877.	1665.	3428.	11718.	33019.	52762.	82591.	107358.	133580.	160842.
7	937.	1777.	3651.	12445.	34978.	55820.	87264.	113341.	140926.	169583.
8	992.	1886.	3883.	13209.	36847.	58470.	90743.	117249.	145069.	173749.
9	1041.	1981.	4080.	13872.	38600.	61134.	94641.	122069.	150777.	180294.
10	1136.	2144.	4375.	14673.	40455.	63863.	98628.	127080.	156867.	187516.

STATION   : 08105000   SAN GABRIEL RIVER AT GEORGETOWN, TX
LOCATION   : LATITUDE N30:39:14, LONGITUDE WO97:39:18
DRAINAGE AREA   : 405.00 mi2 (1049. km2)
PERIOD OF RECORD : 03/1924 - 04/1987
GAGE ALTITUDE   : 643.24 (196.0 m)
TOTAL PERIOD OF RECORD: 39 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8105000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10592.96	10542.61	0.11E+09	2.018	3.71
2	13915.07	13846.74	0.19E+09	1.546	1.36
3	15809.99	15926.50	0.25E+09	1.373	0.56
4	17095.64	16973.47	0.29E+09	1.262	0.14
5	18299.82	18220.72	0.33E+09	1.316	0.43
6	19258.66	19105.10	0.37E+09	1.379	0.78
7	19925.84	19762.11	0.39E+09	1.407	0.94
8	20461.99	20220.10	0.41E+09	1.398	0.93
9	21004.98	20622.24	0.43E+09	1.383	0.90
10	21646.42	21099.59	0.45E+09	1.349	0.77

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	956.	1546.	2686.	7056.	16567.	24781.	36913.	46953.	57627.	68959.
2	1169.	1885.	3284.	8819.	21619.	33323.	51530.	67333.	84796.	104059.
3	1259.	2028.	3541.	9655.	24389.	38392.	60956.	81183.	104160.	130147.
4	1394.	2231.	3870.	10467.	26340.	41452.	65877.	87849.	112891.	141306.
5	1469.	2363.	4122.	11216.	28266.	44437.	70451.	93739.	120161.	150015.
6	1560.	2517.	4399.	11948.	29845.	46584.	73159.	96653.	123024.	152526.
7	1611.	2606.	4563.	12407.	30927.	48161.	75377.	99317.	126069.	155875.
8	1645.	2668.	4684.	12770.	31826.	49505.	77326.	101713.	128877.	159052.
9	1687.	2743.	4826.	13172.	32757.	50832.	79127.	103802.	131163.	161429.
10	1739.	2833.	4991.	13631.	33831.	52394.	81329.	106459.	134221.	164827.

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STATION   : 08105400   SAN GABRIEL RIVER NR CIRCLEVILLE, TEX.(DISC)
LOCATION   : LATITUDE N30:37:43, LONGITUDE W097:28:23
DRAINAGE AREA   : 599.00 mi2 (1551. km2)
PERIOD OF RECORD: 02/1924   - 11/1976
GAGE ALTITUDE   : 520.62 (158.6 m)
TOTAL PERIOD OF RECORD: 20 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8105400

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	16484.63	13869.13	0.19E+09	1.030	-0.62
2	21418.02	17607.92	0.31E+09	1.102	-0.36
3	23156.13	18847.52	0.36E+09	1.200	-0.02
4	24530.28	19451.43	0.38E+09	1.206	0.10
5	25825.00	20450.49	0.42E+09	1.241	0.24
6	27282.45	21780.66	0.47E+09	1.263	0.24
7	28357.19	22547.86	0.51E+09	1.258	0.26
8	29817.24	23607.53	0.56E+09	1.154	-0.05
9	31671.66	25535.20	0.65E+09	1.094	-0.35
10	32772.09	26571.31	0.71E+09	1.094	-0.36

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2585.	3609.	5397.	11577.	24636.	36433.	55161.	72016.	91413.	113733.
2	3290.	4712.	7199.	15629.	32501.	46816.	68254.	86462.	106423.	128317.
3	3705.	5289.	8037.	17198.	35075.	49922.	71755.	90005.	109750.	131153.
4	4014.	5762.	8785.	18682.	37293.	52193.	73382.	90547.	108630.	127762.
5	4205.	6061.	9274.	19770.	39338.	54847.	76684.	94207.	112510.	131727.
6	4395.	6344.	9726.	20811.	41570.	58081.	81387.	100131.	119744.	140369.
7	4496.	6535.	10083.	21721.	43371.	60427.	84260.	103232.	122902.	143411.
8	4547.	6679.	10420.	22792.	45883.	64032.	89267.	109243.	129833.	151186.
9	4578.	6778.	10679.	23811.	48899.	68964.	97248.	119897.	143455.	168084.
10	4625.	6884.	10910.	24547.	50724.	71698.	101265.	124929.	149517.	175199.

STATION   : 08105700   SAN GABRIEL RIVER AT LANEPORT, TX
LOCATION   : LATITUDE N30:41:39, LONGITUDE W097:16:43
DRAINAGE AREA   : 738.00 mi2 (1911. km2)
PERIOD OF RECORD: 07/1965 - 09/1990
GAGE ALTITUDE   : 412.60 (125.7 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8105700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15225.98	9265.06	0.86E+08	1.704	1.49
2	22974.69	14778.61	0.22E+09	1.699	1.42
3	27145.79	19780.01	0.39E+09	2.262	2.96
4	29174.88	21112.54	0.45E+09	2.205	2.79
5	31850.01	22524.73	0.51E+09	1.936	2.01
6	34858.23	24044.97	0.58E+09	1.608	1.20
7	36906.31	25141.84	0.63E+09	1.443	0.80
8	38490.68	25943.39	0.67E+09	1.352	0.61
9	40359.39	26509.64	0.70E+09	1.251	0.46
10	41796.84	27055.31	0.73E+09	1.182	0.36

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	5353.	6453.	8134.	12900.	20929.	27221.	36290.	43851.	52148.	61253.
2	6906.	8741.	11580.	19571.	32549.	42180.	55354.	65804.	76724.	88223.
3	7913.	9917.	13061.	22257.	38217.	50861.	69147.	84421.	101101.	119389.
4	8379.	10562.	13989.	23994.	41241.	54782.	74196.	90287.	107718.	126711.
5	8823.	11248.	15071.	26245.	45424.	60350.	81555.	98968.	117668.	137879.
6	8986.	11732.	16097.	28878.	50520.	66974.	89817.	108115.	127355.	147708.
7	9204.	12146.	16845.	30635.	53883.	71393.	95467.	114549.	134429.	155267.
8	9327.	12451.	17463.	32142.	56562.	74643.	99075.	118116.	137655.	157862.
9	9550.	12941.	18398.	34229.	59756.	77987.	101770.	119688.	137530.	155491.
10	9747.	13328.	19093.	35749.	62129.	80582.	104178.	121620.	138730.	155664.

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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8106500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	87537.19	138439.03	0.19E+11	4.716	20.42
2	148023.69	218940.28	0.48E+11	4.721	20.56
3	184247.38	238923.31	0.57E+11	4.320	18.00
4	211512.86	250356.52	0.63E+11	3.939	15.56
5	232436.27	255939.81	0.66E+11	3.592	13.40
6	249602.61	260287.73	0.68E+11	3.357	11.98
7	264326.06	263826.22	0.70E+11	3.188	10.97
8	279934.22	269574.91	0.73E+11	2.983	9.65
9	293288.53	273653.38	0.75E+11	2.838	8.81
10	305179.03	278157.53	0.77E+11	2.701	8.04

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	11685.	15503.	22306.	48019.	113657.	185692.	322879.	469750.	665843.	925643.
2	20522.	27838.	40755.	87943.	199737.	313531.	515407.	716497.	970137.	1286901.
3	25504.	35759.	53894.	118367.	260565.	393936.	612478.	814831.	1053197.	1333552.
4	29391.	42027.	64362.	142313.	306446.	452572.	680701.	882210.	1110306.	1368348.
5	33064.	47577.	73146.	161147.	341130.	496576.	732726.	935880.	1160871.	1409987.
6	36471.	52703.	81201.	177802.	369464.	530145.	767730.	967042.	1183127.	1411741.
7	39768.	57602.	88781.	192874.	393485.	557068.	792953.	986323.	1191890.	1411160.
8	42991.	62371.	96152.	207717.	418303.	586615.	824945.	1017064.	1218386.	1430364.
9	45779.	66569.	102728.	221002.	439898.	611462.	850067.	1039195.	1234528.	1437521.
10	48622.	70409.	108164.	231092.	457781.	635235.	882025.	1077734.	1280025.	1490414.

STATION   : 08109000   BRAZOS RIVER NR BRYAN, TX
LOCATION   : LATITUDE N30:36:52, LONGITUDE W096:29:10
DRAINAGE AREA   : 39515.00 mi2 (10237 km2)
PERIOD OF RECORD : 08/1899 - 09/1990
GAGE ALTITUDE   : 192.33 (58.62 m)
TOTAL PERIOD OF RECORD: 26 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8109000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	143572.80	75259.95	0.57E+10	1.038	-0.11
2	268775.63	143561.55	0.21E+11	0.904	-0.56
3	374731.13	201909.20	0.41E+11	0.928	-0.62
4	465871.63	257347.63	0.66E+11	0.965	-0.61
5	536185.69	299212.63	0.90E+11	0.974	-0.65
6	592424.75	331785.78	0.11E+12	1.003	-0.53
7	643106.19	365925.22	0.13E+12	1.078	-0.24
8	688794.75	397347.06	0.16E+12	1.147	0.08
9	730327.75	425938.53	0.18E+12	1.235	0.46
10	768186.13	454874.38	0.21E+12	1.336	0.88

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	57470.	67593.	82778.	124541.	192413.	244324.	317867.	378379.	444151.	515699.
2	102907.	122246.	151386.	231954.	363417.	464008.	606442.	723393.	850304.	988086.
3	145812.	171860.	211246.	321231.	504159.	646852.	852212.	1023806.	1212417.	1419954.
4	179747.	211330.	259392.	395370.	626435.	810204.	1078893.	1307118.	1560931.	1843700.
5	207048.	242768.	297310.	452722.	719973.	934863.	1251890.	1523765.	1828181.	2169811.
6	227841.	267416.	327848.	500049.	796078.	1033991.	1384832.	1685506.	2022030.	2399497.
7	244833.	287627.	353133.	540622.	865048.	1127209.	1515510.	1849674.	2224849.	2646976.
8	258801.	304722.	375135.	577248.	928269.	1212683.	1634826.	1998682.	2407734.	2868491.
9	273780.	322161.	396461.	610406.	983870.	1287846.	1740705.	2132537.	2574261.	3073277.
10	286474.	336989.	414740.	639591.	1034742.	1358271.	1842587.	2263675.	2740068.	3280231.

STATION : 08110500   NAVASOTA RIVER NR EASTERLY, TX
LOCATION : LATITUDE N31:10:12, LONGITUDE W096:17:51
DRAINAGE AREA : 968.00 mi2 (2507. km2)
PERIOD OF RECORD: 04/1924 - 09/1990
GAGE ALTITUDE : 271.46 (82.74 m)
TOTAL PERIOD OF RECORD: 37 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8110500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	30055.48	25437.89	0.65E+09	1.061	0.03
2	54440.39	46855.23	0.22E+10	1.141	0.19
3	71129.95	59472.57	0.35E+10	1.066	0.04
4	82490.43	68098.84	0.46E+10	1.040	0.00
5	90299.77	74138.88	0.55E+10	1.066	0.16
6	96319.78	79253.13	0.63E+10	1.117	0.37
7	100453.07	82252.66	0.68E+10	1.103	0.32
8	103208.42	84140.23	0.71E+10	1.076	0.21
9	105388.22	85978.12	0.74E+10	1.063	0.12
10	107175.04	87773.57	0.77E+10	1.047	0.02

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2939.	4800.	8351.	21519.	48068.	69311.	98542.	121207.	144118.	167094.
2	5366.	8746.	15183.	38969.	86738.	124863.	177227.	217772.	258714.	299734.
3	7229.	11819.	20519.	52175.	113705.	161264.	224678.	272477.	319730.	366033.
4	8569.	14005.	24272.	61257.	131885.	185596.	256176.	308700.	360096.	409961.
5	9360.	15401.	26835.	67818.	144732.	202077.	275948.	329926.	381952.	431678.
6	9957.	16456.	28774.	72800.	154517.	214665.	291144.	346357.	399040.	448887.
7	10428.	17277.	30258.	76455.	161255.	222933.	300443.	355802.	408155.	457248.
8	10794.	17876.	31279.	78824.	165633.	228465.	307084.	363017.	415747.	465043.
9	11029.	18260.	31941.	80466.	169066.	233206.	313484.	370613.	424483.	474857.
10	11136.	18437.	32267.	81482.	171895.	237733.	320581.	379828.	435917.	488574.

STATION : 08111000   NAVASOTA RIVER NR BRYAN, TX
LOCATION : LATITUDE N30:52:10, LONGITUDE WO96:11:32
DRAINAGE AREA : 1454.00 mi2 (3766. km2)
PERIOD OF RECORD: 01/1951 - 09/1990
GAGE ALTITUDE : 224.64 (68.47 m)
TOTAL PERIOD OF RECORD: 11 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8111000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	26851.69	23942.21	0.57E+09	0.719	-1.59
2	49582.64	43999.95	0.19E+10	0.662	-1.68
3	65558.95	56238.14	0.32E+10	0.644	-1.67
4	78142.27	65822.27	0.43E+10	0.652	-1.64
5	88790.81	74326.78	0.55E+10	0.665	-1.60
6	97495.55	81702.12	0.67E+10	0.674	-1.57
7	104241.33	88135.86	0.78E+10	0.705	-1.51
8	110022.25	93547.18	0.88E+10	0.744	-1.42
9	114877.05	98142.39	0.96E+10	0.764	-1.38
10	118540.72	101305.91	0.10E+11	0.776	-1.35

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2119.	3624.	6636.	18606.	44452.	65971.	96284.	120174.	144578.	169219.
2	4010.	6780.	12291.	34121.	81736.	122010.	179739.	226027.	273966.	323193.
3	5759.	9674.	17342.	46832.	108159.	157925.	226762.	280220.	334257.	388286.
4	7250.	12087.	21467.	56869.	128696.	185891.	263820.	323585.	383421.	442720.
5	8243.	13819.	24644.	65310.	146556.	210159.	295369.	359725.	423350.	485629.
6	8745.	14844.	26790.	71937.	161712.	231232.	323132.	391646.	458628.	523446.
7	9028.	15456.	28145.	76548.	173411.	248529.	347720.	421539.	493565.	563103.
8	9284.	16024.	29414.	80778.	183549.	262891.	366986.	443951.	518611.	590253.
9	9495.	16476.	30409.	84146.	192007.	275293.	384410.	464948.	542936.	617624.
10	9688.	16887.	31301.	86993.	198489.	284157.	395741.	477630.	556536.	631719.

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STATION    : MILL CREEK NR BELLVILLE, TX
LOCATION   : LATITUDE N29:52:51, LONGITUDE WO96:12:18
DRAINAGE AREA : 376.00 mi2 (974.0 km2)
PERIOD OF RECORD: 08/1963 - 09/1990
GAGE ALTITUDE : 122.82 (37.43 m)
TOTAL PERIOD OF RECORD: 27 YRS.
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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8111700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	20993.35	14341.36	0.21E+09	0.338	-1.30
2	32408.52	22135.37	0.49E+09	0.524	-0.81
3	37131.61	24161.54	0.58E+09	0.438	-0.77
4	39380.21	25087.06	0.63E+09	0.325	-0.92
5	41376.16	26319.62	0.69E+09	0.223	-1.15
6	42749.39	27187.25	0.74E+09	0.203	-1.22
7	44161.10	27619.53	0.76E+09	0.155	-1.25
8	45773.45	27949.96	0.78E+09	0.066	-1.27
9	46872.37	28384.48	0.81E+09	0.017	-1.31
10	47780.87	28774.67	0.83E+09	-.021	-1.35

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2192.	3797.	6876.	17486.	34791.	45682.	57628.	65082.	71347.	76679.
2	3321.	5859.	10767.	27536.	53878.	69640.	86133.	95943.	103881.	110368.
3	4135.	7217.	13077.	32416.	61316.	77832.	94476.	104023.	111530.	117479.
4	4496.	7796.	14034.	34488.	64943.	82356.	99944.	110063.	118044.	124392.
5	4688.	8110.	14584.	35963.	68322.	87184.	106570.	117928.	127017.	134366.
6	4858.	8385.	15050.	37081.	70570.	90210.	110516.	122485.	132113.	139940.
7	5066.	8771.	15767.	38702.	72899.	92504.	112359.	123817.	132877.	140103.
8	5231.	9130.	16519.	40596.	75712.	95286.	114592.	125446.	133837.	140378.
9	5330.	9330.	16922.	41669.	77627.	97562.	117118.	128056.	136472.	143005.
10	5502.	9592.	17329.	42479.	79038.	99365.	119375.	130607.	139279.	146032.

STATION   : 08114000   BRAZOS RIVER AT RICHMOND, TX
LOCATION   : LATITUDE N29:34:56, LONGITUDE W095:45:27
DRAINAGE AREA   : 45007.00 mi2 (11659 km2)
PERIOD OF RECORD: 01/1903 - 09/1990
GAGE ALTITUDE   : 37.94 (11.56 m)
TOTAL PERIOD OF RECORD: 21 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8114000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	123721.39	46799.24	0.22E+10	0.551	-0.06
2	243164.13	93150.67	0.87E+10	0.509	-0.20
3	357704.88	141405.78	0.20E+11	0.484	-0.29
4	464103.94	190995.98	0.36E+11	0.518	-0.27
5	561615.13	238399.05	0.57E+11	0.503	-0.46
6	651249.13	284305.28	0.81E+11	0.515	-0.58
7	734026.06	329372.81	0.11E+12	0.527	-0.67
8	811513.63	372350.25	0.14E+12	0.535	-0.72
9	880833.13	411617.44	0.17E+12	0.565	-0.69
10	944503.63	447884.16	0.20E+12	0.570	-0.70

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	56898.	67801.	82996.	118329.	162187.	188332.	218472.	239032.	258097.	276110.
2	110273.	131767.	161826.	232086.	319870.	372449.	433264.	474861.	513509.	550095.
3	156496.	188572.	233717.	340254.	474483.	555204.	648704.	712695.	772166.	828412.
4	195198.	237102.	296612.	438947.	621143.	731909.	861147.	950111.	1033131.	1111934.
5	231502.	281274.	352600.	526190.	755248.	898403.	1069369.	1189576.	1303651.	1413778.
6	265275.	321633.	402897.	604160.	878043.	1054256.	1270068.	1425382.	1575736.	1723427.
7	293599.	356197.	447024.	675298.	993349.	1202307.	1462739.	1653148.	1839927.	2025518.
8	318344.	387136.	487462.	742207.	1102484.	1342136.	1643800.	1866289.	2086088.	2305848.
9	339848.	414349.	523421.	802307.	1200484.	1467327.	1805141.	2055524.	2303839.	2552962.
10	358589.	438414.	555691.	857328.	1291279.	1583760.	1955599.	2232180.	2507225.	2783835.

STATION   : SAN BERNARD RIVER NR BOLING, TX
LOCATION   : LATITUDE N29:18:48, LONGITUDE W095:53:37
DRAINAGE AREA   :   727.00 mi2 (1883. km2)
PERIOD OF RECORD: 05/1954 - 09/1990
GAGE ALTITUDE   :   30.81 (9.390 m)
TOTAL PERIOD OF RECORD: 36 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8117500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15888.15	11119.15	0.12E+09	1.031	-0.25
2	30681.38	21918.06	0.48E+09	1.036	-0.28
3	43605.57	31454.17	0.99E+09	1.030	-0.30
4	55163.32	39907.59	0.16E+10	1.012	-0.35
5	65092.96	46817.75	0.22E+10	0.979	-0.42
6	73529.05	52256.63	0.27E+10	0.927	-0.49
7	80166.17	56622.20	0.32E+10	0.884	-0.55
8	85583.70	59993.60	0.36E+10	0.839	-0.64
9	90216.37	62759.96	0.39E+10	0.793	-0.71
10	94018.52	64841.43	0.42E+10	0.753	-0.77

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3887.	5039.	6897.	12557.	22816.	31148.	43379.	53712.	65056.	77569.
2	7241.	9435.	13000.	23982.	44188.	60784.	85360.	106278.	129371.	154980.
3	9921.	13054.	18168.	33992.	63128.	86973.	122130.	151894.	184598.	220685.
4	12077.	16103.	22705.	43136.	80420.	110497.	154218.	190683.	230243.	273338.
5	13817.	18672.	26661.	51306.	95587.	130565.	180402.	221118.	264528.	310994.
6	15125.	20744.	30034.	58574.	108826.	147531.	201314.	244192.	288932.	335885.
7	15996.	22203.	32523.	64230.	119413.	161226.	218335.	263094.	309082.	356677.
8	16725.	23430.	34623.	68981.	128112.	172247.	231594.	277395.	323800.	371223.
9	17280.	24424.	36382.	73095.	135647.	181709.	242790.	289296.	335899.	382950.
10	17847.	25364.	37953.	76556.	141733.	189204.	251477.	298405.	345058.	391716.

STATION : BEALS CREEK ABOVE BIG SPRINGS, TEX (DISC)
LOCATION : LATITUDE N32:15:01, LONGITUDE W101:29:26
DRAINAGE AREA : 9319.00 mi2 (24142 km2)
PERIOD OF RECORD: 01/1959 - 09/1979
GAGE ALTITUDE : 2400.02 (731.5 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8123650

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	132.16	106.93	0.11E+05	0.804	-0.77
2	236.93	203.05	0.41E+05	1.023	-0.27
3	303.50	274.97	0.76E+05	1.397	0.70
4	354.45	344.63	0.12E+06	1.786	1.81
5	400.12	414.61	0.17E+06	2.017	2.46
6	442.59	479.29	0.23E+06	2.120	2.71
7	477.45	531.30	0.28E+06	2.188	2.89
8	503.32	570.30	0.33E+06	2.260	3.16
9	522.98	601.81	0.36E+06	2.333	3.45
10	538.93	627.24	0.39E+06	2.388	3.67

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	7.	15.	33.	108.	231.	300.	363.	396.	419.	435.
2	15.	29.	59.	178.	404.	558.	737.	852.	952.	1038.
3	20.	38.	76.	226.	511.	709.	942.	1095.	1228.	1345.
4	25.	45.	88.	257.	585.	824.	1115.	1316.	1498.	1663.
5	28.	51.	96.	278.	649.	935.	1305.	1574.	1831.	2074.
6	32.	56.	104.	297.	707.	1039.	1491.	1836.	2180.	2518.
7	33.	58.	110.	318.	760.	1119.	1608.	1982.	2353.	2718.
8	36.	62.	115.	328.	793.	1181.	1728.	2158.	2598.	3042.
9	37.	64.	119.	340.	822.	1225.	1793.	2239.	2695.	3153.
10	40.	68.	123.	346.	839.	1261.	1872.	2366.	2880.	3413.
10	40.	68.	123.	346.	839.	1261.	1872.	2366.	2880.	3413.

STATION   : 08123800   BEALS CREEK NR WESTBROOK, TX
LOCATION   : LATITUDE N32:11:57, LONGITUDE W101:00:49
DRAINAGE AREA   : 9802.00 mi2 (25393 km2)
PERIOD OF RECORD: 10/1958 - 09/1991
GAGE ALTITUDE   : 2048.74 (624.4 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8123800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	3542.61	3274.04	0.11E+08	1.204	-0.11
2	5144.61	4898.41	0.24E+08	1.452	0.78
3	5997.17	5565.63	0.31E+08	1.372	0.57
4	6528.25	6033.27	0.36E+08	1.402	0.72
5	6820.56	6342.63	0.40E+08	1.473	1.03
6	7115.76	6573.29	0.43E+08	1.502	1.26
7	7377.58	6709.76	0.45E+08	1.469	1.24
8	7612.16	6880.92	0.47E+08	1.434	1.06
9	7864.10	7021.65	0.49E+08	1.407	0.97
10	8015.63	7125.39	0.51E+08	1.386	0.89

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	292.	501.	916.	2503.	5693.	8175.	11459.	13908.	16300.	18612.
2	433.	735.	1329.	3597.	8207.	11851.	16758.	20478.	24164.	27778.
3	518.	874.	1570.	4219.	9593.	13848.	19598.	23971.	28317.	32591.
4	575.	968.	1733.	4627.	10441.	15006.	21131.	25763.	30345.	34832.
5	607.	1017.	1814.	4820.	10884.	15676.	22151.	27078.	31980.	36807.
6	644.	1075.	1911.	5051.	11356.	16324.	23027.	28123.	33190.	38176.
7	673.	1124.	1999.	5274.	11808.	16922.	23778.	28961.	34091.	39117.
8	713.	1183.	2089.	5458.	12152.	17392.	24430.	29761.	35048.	40241.
9	753.	1247.	2193.	5685.	12556.	17892.	25015.	30384.	35688.	40878.
10	774.	1279.	2244.	5801.	12793.	18228.	25491.	30973.	36393.	41704.

STATION : COLORADO R NR SILVER, TEX (DISC)
LOCATION : LATITUDE N32:01:10, LONGITUDE W100:44:08
DRAINAGE AREA   : 14997.00 mi2 (38852 km2)
PERIOD OF RECORD: 10/1956 - 09/1970
GAGE ALTITUDE   : 1875.15 (571.5 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8123900

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	11409.78	10413.29	0.11E+09	1.456	-0.07
2	19230.61	19775.18	0.39E+09	1.720	0.46
3	22361.79	23254.14	0.54E+09	1.747	0.52
4	24551.55	25996.98	0.68E+09	1.773	0.55
5	26148.95	27800.06	0.77E+09	1.760	0.50
6	27973.75	29535.33	0.87E+09	1.698	0.37
7	29216.69	30702.07	0.94E+09	1.660	0.29
8	30626.09	33104.36	0.11E+10	1.726	0.47
9	31884.31	35468.56	0.13E+10	1.812	0.73
10	32608.28	36715.29	0.13E+10	1.838	0.82

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1848.	2529.	3712.	7839.	16826.	25258.	39151.	52093.	67482.	85707.
2	2975.	3971.	5721.	12100.	27364.	43144.	71590.	100471.	137431.	184351.
3	3412.	4560.	6581.	13980.	31774.	50244.	83654.	117678.	161323.	216855.
4	3602.	4848.	7053.	15186.	34898.	55445.	92709.	130701.	179486.	241577.
5	3734.	5062.	7419.	16142.	37284.	59262.	98980.	139273.	190819.	256133.
6	3801.	5225.	7770.	17256.	40252.	64016.	106652.	149468.	203823.	272067.
7	4101.	5560.	8158.	17855.	41693.	66788.	112653.	159691.	220378.	297938.
8	4291.	5749.	8353.	18189.	43093.	70140.	121038.	174871.	246005.	339251.
9	4370.	5834.	8460.	18492.	44447.	73217.	128420.	187900.	267700.	373910.
10	4401.	5872.	8517.	18681.	45275.	75039.	132718.	195395.	280116.	393668.

STATION   : 08126500   COLORADO RIVER AT BALLINGER, TX
LOCATION   : LATITUDE N31:43:58, LONGITUDE W099:57:13
DRAINAGE AREA   : 16413.00 mi2 (42520 km2)
PERIOD OF RECORD: 06/1907 - 10/1979
GAGE ALTITUDE   : 1593.74 (485.7 m)
TOTAL PERIOD OF RECORD: 61 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8126500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	28714.82	20761.23	0.43E+09	1.393	2.44
2	47390.42	35022.04	0.12E+10	1.611	4.27
3	58218.36	42888.11	0.18E+10	1.112	1.22
4	65208.22	49301.58	0.24E+10	1.054	0.56
5	69114.54	52788.55	0.28E+10	1.057	0.52
6	72236.13	55603.77	0.31E+10	1.054	0.42
7	75212.73	58452.97	0.34E+10	1.110	0.58
8	78834.96	62080.40	0.39E+10	1.120	0.55
9	82125.05	64895.96	0.42E+10	1.085	0.37
10	84972.16	67181.42	0.45E+10	1.114	0.50

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5589.	7778.	11437.	22782.	42799.	58138.	79282.	95990.	113271.	131262.
2	8637.	12227.	18302.	37391.	71257.	97123.	132527.	160267.	188707.	218080.
3	10108.	14369.	21649.	45011.	87836.	121486.	168660.	206427.	245847.	287215.
4	10920.	15544.	23495.	49435.	98323.	137704.	194122.	240185.	289061.	341117.
5	11336.	16181.	24545.	52027.	104311.	146740.	207879.	258044.	311486.	368605.
6	11682.	16706.	25400.	54103.	109069.	153900.	218760.	272165.	329215.	390342.
7	12191.	17394.	26393.	56139.	113350.	160248.	228439.	284853.	345372.	410462.
8	12598.	17961.	27261.	58238.	118669.	168869.	242730.	304503.	371378.	443901.
9	12881.	18426.	28073.	60385.	123810.	176715.	254777.	320209.	391158.	468210.
10	13164.	18924.	28971.	62635.	128441.	182999.	262980.	329592.	401404.	478982.

STATION   : 08127000   ELM CREEK AT BALLINGER, TX
LOCATION   : LATITUDE N31:44:57, LONGITUDE W099:56:51
DRAINAGE AREA   : 450.00 mi2 (1165.   km2)
PERIOD OF RECORD: 04/1932   - 09/1991
GAGE ALTITUDE   : 1617.72 (493.0 m)
TOTAL PERIOD OF RECORD: 57 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8127000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8564.59	9728.84	0.95E+08	2.030	3.14
2	11515.37	12471.36	0.16E+09	1.779	1.89
3	12667.65	13224.91	0.17E+09	1.697	1.72
4	13330.32	13635.17	0.19E+09	1.686	1.85
5	13706.97	13900.03	0.19E+09	1.709	2.06
6	13985.05	13947.11	0.19E+09	1.683	2.00
7	14443.43	14346.55	0.21E+09	1.759	2.56
8	14850.71	14777.32	0.21E+09	1.836	3.14
9	15057.00	14857.73	0.22E+09	1.815	3.09
10	15253.87	14856.24	0.22E+09	1.801	3.06

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	641.	1056.	1881.	5210.	13002.	20130.	31161.	40667.	51088.	62496.
2	894.	1479.	2637.	7241.	17668.	26903.	40777.	52409.	64888.	78239.
3	1002.	1668.	2984.	8172.	19640.	29543.	44060.	55962.	68507.	81667.
4	1050.	1764.	3180.	8749.	20848.	31075.	45748.	57530.	69750.	82325.
5	1087.	1835.	3315.	9113.	21518.	31832.	46392.	57908.	69711.	81691.
6	1133.	1917.	3461.	9456.	22031.	32284.	46498.	57555.	68740.	79929.
7	1164.	1980.	3595.	9852.	22840.	33297.	47607.	58606.	69623.	80538.
8	1196.	2036.	3699.	10142.	23499.	34232.	48894.	60144.	71396.	82528.
9	1241.	2106.	3808.	10356.	23808.	34549.	49149.	60307.	71435.	82413.
10	1283.	2179.	3938.	10642.	24170.	34787.	48994.	59700.	70257.	80559.

STATION : 08128000 SOUTH CONCHO RIVER AT CHRISTOVAL, TX
LOCATION : LATITUDE N31:11:15, LONGITUDE W100:30:06
DRAINAGE AREA : 413.00 mi2 (1069. km2)
PERIOD OF RECORD: 03/1930 - 09/1990
GAGE ALTITUDE : 2010.22 (612.7 m)
TOTAL PERIOD OF RECORD: 59 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8128000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	5138.12	11830.79	0.14E+09	3.429	9.75
2	5730.60	12419.69	0.15E+09	3.301	9.11
3	6820.91	16675.33	0.28E+09	3.932	14.19
4	7271.64	18023.12	0.32E+09	3.884	13.35
5	7506.78	18458.23	0.34E+09	3.830	12.84
6	7593.85	18498.13	0.34E+09	3.824	12.80
7	7686.26	18514.76	0.34E+09	3.820	12.78
8	7762.12	18537.62	0.34E+09	3.812	12.73
9	7900.80	18674.35	0.35E+09	3.762	12.35
10	8097.84	19033.24	0.36E+09	3.678	11.61

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	31.	65.	161.	907.	5087.	12505.	32578.	60432.	105184.	174980.
2	57.	111.	247.	1185.	5885.	13810.	34683.	63221.	108957.	180155.
3	83.	147.	303.	1302.	6230.	14780.	38397.	72412.	129901.	224187.
4	108.	182.	354.	1403.	6425.	15148.	39543.	75463.	137379.	241411.
5	133.	215.	401.	1496.	6600.	15400.	40074.	76672.	140296.	248303.
6	158.	249.	450.	1592.	6742.	15460.	39701.	75449.	137477.	242635.
7	182.	281.	496.	1688.	6918.	15629.	39615.	74727.	135389.	237837.
8	205.	311.	538.	1765.	7032.	15709.	39491.	74203.	134145.	235368.
9	230.	342.	579.	1839.	7173.	15903.	39839.	74815.	135400.	238039.
10	254.	372.	618.	1906.	7307.	16136.	40434.	76123.	138307.	244330.

STATION : MIDDLE CONCHO RIVER ABOVE TANKERSLEY, TX
LOCATION : LATITUDE N31:25:38, LONGITUDE W100:42:39
DRAINAGE AREA : 2579.00 mi2 (6681. km2)
PERIOD OF RECORD: 04/1961 - 09/1990
GAGE ALTITUDE : 1986.47 (605.4 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8128400

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	3122.13	5041.30	0.25E+08	3.635	11.35
2	4446.61	8169.54	0.67E+08	4.123	14.25
3	4989.01	9432.31	0.89E+08	4.151	14.35
4	5602.46	11318.96	0.13E+09	4.349	15.60
5	5973.94	12217.58	0.15E+09	4.333	15.51
6	6209.01	12518.67	0.16E+09	4.250	15.02
7	6473.43	12744.03	0.16E+09	4.159	14.53
8	6598.59	13014.38	0.17E+09	4.147	14.45
9	6678.71	13176.34	0.17E+09	4.136	14.38
10	6761.13	13286.16	0.18E+09	4.130	14.34

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	100.	184.	377.	1372.	4536.	8152.	14824.	21481.	29667.	39596.
2	131.	241.	492.	1813.	6147.	11257.	20967.	30923.	43450.	58977.
3	143.	262.	536.	1981.	6784.	12511.	23518.	34918.	49390.	67474.
4	151.	274.	558.	2076.	7311.	13804.	26766.	40688.	58916.	82388.
5	158.	285.	575.	2136.	7639.	14631.	28934.	44663.	65675.	93282.
6	163.	293.	591.	2200.	7924.	15269.	30438.	47271.	69933.	99933.
7	167.	301.	607.	2277.	8288.	16087.	32355.	50569.	75274.	108214.
8	173.	309.	620.	2309.	8399.	16330.	32954.	51664.	77159.	111319.
9	177.	315.	631.	2336.	8475.	16476.	33268.	52201.	78046.	112740.
10	182.	323.	645.	2382.	8603.	16677.	33561.	52537.	78371.	112962.

STATION : MIDDLE CONCHO RIVER NEAR TANKERSLEY, TEX (DISC)
LOCATION : LATITUDE N31:22:35, LONGITUDE W100:36:50
DRAINAGE AREA : 2653.00 mi2 (6873. km2)
PERIOD OF RECORD: 03/1930 - 03/1961
GAGE ALTITUDE : 1919.51 (585.0 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8128500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8433.72	7786.30	0.61E+08	1.990	4.27
2	12811.56	14942.78	0.22E+09	2.774	7.64
3	13928.56	16082.54	0.26E+09	2.803	7.90
4	14510.63	16614.06	0.28E+09	2.750	7.69
5	14983.26	16999.92	0.29E+09	2.645	7.18
6	15406.17	17304.84	0.30E+09	2.490	6.35
7	15916.10	17779.64	0.32E+09	2.295	5.28
8	16383.72	18317.39	0.34E+09	2.150	4.41
9	16643.39	18603.31	0.35E+09	2.092	4.04
10	16835.01	18717.01	0.35E+09	2.066	3.89

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	484.	997.	2139.	6675.	14327.	18800.	23212.	25654.	27492.	28885.
2	659.	1273.	2618.	8418.	20836.	30448.	42731.	51488.	59662.	67230.
3	777.	1453.	2904.	9071.	22511.	33285.	47588.	58189.	68441.	78208.
4	837.	1535.	3019.	9314.	23334.	34923.	50836.	63018.	75126.	86988.
5	873.	1584.	3087.	9483.	24019.	36332.	53675.	67269.	81049.	94817.
6	905.	1626.	3141.	9615.	24613.	37612.	56362.	71382.	86884.	102651.
7	931.	1655.	3177.	9721.	25280.	39170.	59801.	76793.	94721.	113416.
8	955.	1683.	3210.	9809.	25855.	40549.	62940.	81831.	102148.	123803.
9	985.	1721.	3262.	9906.	26161.	41190.	64334.	84065.	105460.	128488.
10	1020.	1776.	3348.	10081.	26440.	41505.	64648.	84344.	105677.	128620.

STATION : 8129300   SPRING CREEK ABOVE TANKERSLEY, TX
LOCATION : LATITUDE N31:19:48, LONGITUDE W100:38:24
DRAINAGE AREA : 425.00 mi2 (1101. km2)
PERIOD OF RECORD : 10/1960 - 09/1990
GAGE ALTITUDE : 1964.72 (598.8 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8129300

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1957.30	4467.80	0.20E+08	4.093	14.04
2	2559.94	6273.32	0.39E+08	4.341	15.48
3	2925.65	7756.23	0.60E+08	4.611	17.13
4	3284.08	9277.91	0.86E+08	4.781	18.16
5	3435.44	9460.89	0.90E+08	4.739	17.92
6	3497.61	9508.28	0.90E+08	4.723	17.81
7	3544.05	9536.46	0.91E+08	4.716	17.77
8	3585.66	9560.13	0.91E+08	4.710	17.73
9	3624.51	9581.22	0.92E+08	4.705	17.70
10	3666.17	9600.57	0.92E+08	4.699	17.67

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	14.	27.	60.	304.	1783.	4781.	14306.	29770.	58588.	110496.
2	25.	45.	93.	423.	2261.	5831.	16852.	34474.	66967.	125144.
3	37.	61.	119.	490.	2453.	6184.	17655.	36037.	70153.	131767.
4	47.	75.	141.	542.	2612.	6514.	18578.	38056.	74609.	141384.
5	58.	90.	164.	606.	2810.	6879.	19288.	39112.	76048.	143093.
6	68.	105.	186.	656.	2920.	7003.	19239.	38512.	74052.	137948.
7	77.	117.	205.	701.	3018.	7107.	19143.	37822.	71866.	132399.
8	86.	130.	223.	743.	3105.	7197.	19051.	37210.	69963.	127645.
9	95.	142.	241.	783.	3186.	7281.	18975.	36687.	68341.	123617.
10	105.	155.	260.	823.	3264.	7366.	18957.	36377.	67319.	121068.

STATION   : SPRING C NR TANKERSLEY, TEX (DISC)
LOCATION   : LATITUDE N31:21:30, LONGITUDE W100:32:05
DRAINAGE AREA   :   699.10 mi2 (1811.   km2)
PERIOD OF RECORD: 03/1930 - 09/1960
GAGE ALTITUDE   :   1874.61 (571.3 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8131000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8149.88	11489.00	0.13E+09	3.521	11.22
2	9752.93	14067.87	0.20E+09	3.783	12.90
3	10749.45	14966.79	0.22E+09	3.278	9.69
4	11382.03	15865.33	0.25E+09	3.017	7.68
5	11986.96	16864.10	0.28E+09	2.881	6.50
6	12200.72	16987.42	0.29E+09	2.863	6.39
7	12340.03	17044.72	0.29E+09	2.853	6.35
8	12478.52	17078.62	0.29E+09	2.847	6.33
9	12686.72	17127.33	0.29E+09	2.830	6.27
10	13227.07	18430.19	0.34E+09	2.844	5.99

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	272.	570.	1282.	4770.	13263.	20371.	29913.	36970.	43723.	50100.
2	392.	768.	1624.	5635.	15473.	24068.	36263.	45814.	55443.	64981.
3	491.	902.	1803.	5939.	16582.	26629.	42198.	55474.	69844.	85204.
4	575.	1011.	1941.	6126.	17128.	27959.	45583.	61360.	79120.	99010.
5	644.	1100.	2055.	6305.	17673.	29214.	48678.	66741.	87762.	112045.
6	707.	1185.	2169.	6477.	17901.	29523.	49253.	67713.	89380.	114615.
7	764.	1259.	2266.	6605.	18023.	29650.	49483.	68156.	90219.	116080.
8	817.	1330.	2363.	6754.	18193.	29803.	49607.	68274.	90374.	116331.
9	863.	1396.	2461.	6948.	18528.	30219.	50097.	68794.	90902.	116839.
10	912.	1455.	2534.	7080.	18987.	31262.	52584.	73079.	97772.	127292.

STATION   : NORTH CONCHO RIVER AT STERLING CITY, TX
LOCATION : LATITUDE N31:49:48, LONGITUDE W100:59:36
DRAINAGE AREA   : 588.00 mi2 (1523. km2)
PERIOD OF RECORD: 09/1939 - 05/1987
GAGE ALTITUDE   : 2242.36 (683.4 m)
TOTAL PERIOD OF RECORD: 48 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8133500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	2615.84	3869.19	0.15E+08	2.228	3.93
2	3599.89	5439.21	0.30E+08	2.249	3.92
3	3810.91	5669.17	0.32E+08	2.169	3.57
4	3887.26	5772.81	0.33E+08	2.165	3.56
5	3907.26	5787.15	0.33E+08	2.157	3.53
6	3938.01	5786.08	0.33E+08	2.151	3.52
7	3972.29	5786.29	0.33E+08	2.143	3.50
8	4027.67	5825.15	0.34E+08	2.094	3.30
9	4051.64	5851.16	0.34E+08	2.083	3.25
10	4122.88	5927.50	0.35E+08	2.085	3.33

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	28.	65.	169.	894.	3864.	7679.	15102.	22681.	32036.	43308.
2	39.	87.	221.	1157.	5141.	10520.	21574.	33465.	48800.	68148.
3	43.	95.	238.	1223.	5427.	11156.	23080.	36079.	53054.	74733.
4	45.	99.	245.	1250.	5523.	11354.	23530.	36853.	54321.	76716.
5	47.	102.	251.	1261.	5540.	11385.	23631.	37083.	54794.	77593.
6	48.	104.	257.	1291.	5635.	11515.	23720.	37010.	54371.	76559.
7	49.	107.	264.	1321.	5725.	11642.	23837.	37033.	54179.	75983.
8	50.	108.	268.	1339.	5809.	11819.	24216.	37643.	55102.	77320.
9	51.	110.	271.	1348.	5836.	11874.	24349.	37882.	55513.	77987.
10	51.	111.	274.	1369.	5949.	12127.	24917.	38815.	56940.	80069.

STATION   : NORTH CONCHO RIVER NRCARLSBAD, TX
LOCATION   : LATITUDE N31:35:33, LONGITUDE W100:38:12
DRAINAGE AREA : 1266.00 mi2 (3279. km2)
PERIOD OF RECORD: 04/1924 - 09/1990
GAGE ALTITUDE : 1968.02 (599.8 m)
TOTAL PERIOD OF RECORD: 65 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8134000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9468.51	19533.33	0.38E+09	4.145	17.98
2	12300.19	23379.54	0.55E+09	3.392	11.30
3	13125.30	24121.72	0.58E+09	3.187	9.99
4	13425.02	24354.15	0.59E+09	3.145	9.77
5	13589.51	24491.31	0.60E+09	3.122	9.62
6	13822.04	24635.92	0.61E+09	3.127	9.74
7	13934.70	24695.10	0.61E+09	3.123	9.74
8	14055.47	24747.91	0.61E+09	3.112	9.68
9	14153.60	24807.18	0.62E+09	3.096	9.58
10	15597.05	32904.12	0.11E+10	4.703	24.21

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	123.	250.	575.	2662.	11411.	23652.	50335.	80950.	122998.	179414.
2	172.	341.	770.	3492.	14964.	31277.	67553.	110061.	169564.	250982.
3	197.	385.	853.	3780.	16018.	33455.	72451.	118486.	183403.	272942.
4	210.	407.	895.	3915.	16460.	34294.	74155.	121239.	187697.	279482.
5	220.	423.	926.	4016.	16741.	34732.	74776.	121919.	188295.	279764.
6	227.	438.	960.	4155.	17217.	35546.	76041.	123386.	189654.	280443.
7	234.	450.	984.	4233.	17435.	35877.	76474.	123795.	189872.	280201.
8	240.	462.	1009.	4332.	17716.	36264.	76783.	123676.	188762.	277213.
9	245.	470.	1025.	4379.	17864.	36546.	77369.	124646.	190315.	279634.
10	250.	474.	1025.	4387.	18326.	38299.	83453.	137476.	214640.	322547.

STATION   : 08136000   CONCHO RIVER AT SAN ANGELO, TX
LOCATION   : LATITUDE N31:27:16, LONGITUDE W100:24:37
DRAINAGE AREA   : 5542.00 mi2 (14357 km2)
PERIOD OF RECORD: 10/1915 - 09/1990
GAGE ALTITUDE   : 1776.79 (541.5 m)
TOTAL PERIOD OF RECORD: 36 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8136000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	26754.00	42456.92	0.18E+10	4.608	19.81
2	36137.02	49825.30	0.25E+10	3.861	14.94
3	42957.64	71444.34	0.51E+10	4.640	19.97
4	46657.19	77447.41	0.60E+10	4.552	19.34
5	49217.03	79801.91	0.64E+10	4.339	17.81
6	51199.20	81455.59	0.66E+10	4.120	16.17
7	52761.86	83420.76	0.70E+10	3.959	14.86
8	53625.76	83926.81	0.70E+10	3.923	14.60
9	54607.42	84447.54	0.71E+10	3.863	14.19
10	55612.47	85022.81	0.72E+10	3.793	13.74

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1571.	2667.	4931.	14655.	39194.	62883.	101081.	135136.	173461.	216398.
2	2331.	3867.	6989.	20230.	53835.	86831.	141195.	190754.	247705.	312771.
3	2705.	4338.	7618.	21758.	60078.	100735.	173110.	244233.	331461.	437530.
4	3073.	4794.	8215.	22973.	64086.	109432.	193433.	279368.	388483.	525882.
5	3248.	5035.	8581.	23950.	67393.	116127.	207955.	303374.	426317.	583161.
6	3408.	5246.	8885.	24689.	69817.	121110.	219100.	322204.	456692.	630101.
7	3552.	5426.	9126.	25200.	71466.	124652.	227502.	336936.	481273.	669182.
8	3673.	5597.	9385.	25784.	72817.	126777.	230993.	341781.	487839.	677900.
9	3774.	5739.	9604.	26319.	74272.	129363.	235947.	349438.	499323.	694660.
10	3860.	5858.	9785.	26782.	75686.	132075.	241590.	358610.	513680.	716376.

STATION : 08136500   CONCHO RIVER AT PAINT ROCK, TX
LOCATION : LATITUDE N31:30:57, LONGITUDE W099:55:09
DRAINAGE AREA : 6574.00 mi2 (17031 km2)
PERIOD OF RECORD: 10/1915 - 09/1990
GAGE ALTITUDE : 1574.36 (479.8 m)
TOTAL PERIOD OF RECORD: 36 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8136500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	29961.98	44947.53	0.20E+10	4.380	18.16
2	46782.48	75834.23	0.58E+10	4.456	18.38
3	55745.63	95862.52	0.92E+10	4.640	19.76
4	62814.83	113519.38	0.13E+11	4.705	20.18
5	66754.66	122456.77	0.15E+11	4.691	20.03
6	68993.08	124580.40	0.16E+11	4.659	19.81
7	70608.83	125194.08	0.16E+11	4.606	19.45
8	72133.28	125832.15	0.16E+11	4.549	19.06
9	73776.78	126864.63	0.16E+11	4.449	18.33
10	75071.29	127628.61	0.16E+11	4.403	18.04

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2595.	3902.	6395.	16429.	42117.	68822.	116091.	162683.	220189.	290758.
2	3877.	5774.	9399.	24227.	63621.	106224.	184564.	264470.	366297.	494800.
3	4264.	6360.	10401.	27332.	74138.	126623.	226355.	331032.	467870.	644498.
4	4527.	6714.	10952.	29080.	81251.	142115.	262209.	392521.	568152.	801069.
5	4914.	7178.	11542.	30219.	84812.	149882.	281180.	427096.	627691.	899253.
6	5063.	7429.	11997.	31548.	88457.	155888.	291113.	440362.	644423.	919036.
7	5185.	7648.	12407.	32746.	91466.	160362.	297168.	446563.	649112.	919244.
8	5275.	7819.	12743.	33780.	94222.	164657.	303512.	454071.	656878.	925698.
9	5335.	7931.	12968.	34551.	96716.	169215.	312152.	467119.	675757.	952202.
10	5384.	8025.	13159.	35206.	98798.	172967.	319120.	477477.	690483.	972506.

STATION   : 08138000   COLORADO RIVER AT WINCHELL, TX
LOCATION   : LATITUDE N31:28:04, LONGITUDE W099:09:43
DRAINAGE AREA   : 25179.00 mi2 (65230 km2)
PERIOD OF RECORD: 12/1923 - 09/1990
GAGE ALTITUDE : 1264.86 (385.5 m)
TOTAL PERIOD OF RECORD: 24 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8138000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	47865.30	25403.59	0.65E+09	1.564	2.74
2	83528.10	51627.19	0.27E+10	1.798	3.37
3	105463.07	66872.05	0.45E+10	1.623	2.59
4	119738.94	77363.45	0.60E+10	1.448	1.65
5	128456.45	81215.53	0.66E+10	1.244	0.92
6	134511.33	82602.13	0.68E+10	1.136	0.67
7	140641.73	84613.96	0.72E+10	0.987	0.29
8	144900.19	86284.87	0.74E+10	0.900	0.05
9	151617.63	98078.09	0.96E+10	1.438	1.81
10	159087.13	109955.68	0.12E+11	1.797	3.10

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	16842.	21022.	27228.	43267.	66159.	81347.	100316.	114171.	127716.	141137.
2	25815.	32561.	42919.	71675.	117459.	150872.	195974.	231325.	267921.	306119.
3	31058.	39365.	52270.	88926.	149258.	194560.	257106.	307149.	359799.	415608.
4	34055.	43320.	57831.	99689.	170130.	224024.	299548.	360791.	425911.	495632.
5	36038.	46172.	62045.	107610.	183354.	240469.	319468.	382694.	449193.	519625.
6	38720.	49412.	66076.	113515.	191536.	249898.	330139.	394032.	460972.	531619.
7	40587.	51863.	69414.	119191.	200486.	260864.	343375.	408688.	476789.	548325.
8	41979.	53612.	71706.	122960.	206538.	268539.	353194.	420155.	489934.	563195.
9	43456.	54935.	72951.	125337.	214941.	284704.	383960.	465660.	553599.	648892.
10	45139.	56598.	74696.	128470.	224153.	301709.	416068.	513199.	620897.	740476.

STATION   : SAN SABA RIVER AT MENARD, TX
LOCATION : LATITUDE N30:55:08, LONGITUDE W099:47:07
DRAINAGE AREA   : 1135.00 mi2 (2940. km2)
PERIOD OF RECORD: 10/1915 - 09/1990
GAGE ALTITUDE   : 1863.05 (567.8 m)
TOTAL PERIOD OF RECORD: 75 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8144500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10556.57	17525.67	0.31E+09	3.161	11.19
2	14551.46	27761.23	0.77E+09	4.378	21.97
3	16417.40	33832.12	0.11E+10	4.884	26.65
4	17500.62	38459.81	0.15E+10	5.417	32.33
5	17930.35	39309.62	0.15E+10	5.437	32.62
6	18296.05	40073.04	0.16E+10	5.458	32.90
7	18617.27	40726.27	0.17E+10	5.473	33.07
8	18886.63	40957.28	0.17E+10	5.447	32.83
9	19250.51	41116.55	0.17E+10	5.390	32.32
10	19547.97	41302.34	0.17E+10	5.330	31.72

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	157.	321.	745.	3421.	14168.	28557.	58569.	91622.	135435.	192274.
2	262.	496.	1066.	4474.	18123.	37095.	78814.	127492.	195592.	288930.
3	338.	607.	1236.	4870.	19396.	40125.	87396.	144755.	228074.	346651.
4	402.	694.	1358.	5083.	19883.	41339.	91499.	153903.	247082.	382988.
5	458.	770.	1464.	5267.	20193.	41902.	93143.	157573.	255028.	398818.
6	512.	840.	1560.	5427.	20445.	42330.	94342.	160364.	261191.	411471.
7	566.	913.	1662.	5613.	20741.	42703.	94897.	161387.	263257.	415820.
8	617.	980.	1759.	5797.	21072.	43151.	95552.	162407.	264988.	419025.
9	668.	1049.	1856.	5992.	21520.	43950.	97291.	165647.	270932.	429812.
10	714.	1110.	1943.	6173.	21909.	44557.	98329.	167257.	273464.	433920.

STATION   : SAN SABA RIVER NR BRADY, TX
LOCATION   : LATITUDE N31:00:14, LONGITUDE WO99:16:07
DRAINAGE AREA   :   1633.00 mi2 (4230.   km2)
PERIOD OF RECORD: 07/1979 - 09/1990
GAGE ALTITUDE   :   1530.98 (466.6 m)
TOTAL PERIOD OF RECORD: 11 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8144600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12209.71	18570.91	0.34E+09	1.355	-0.89
2	18042.37	27696.71	0.77E+09	1.527	-0.46
3	19377.79	29064.60	0.84E+09	1.546	-0.38
4	20175.51	29476.71	0.87E+09	1.537	-0.37
5	20590.96	29675.21	0.88E+09	1.524	-0.38
6	20922.01	29844.63	0.89E+09	1.511	-0.40
7	21568.45	30594.29	0.94E+09	1.478	-0.51
8	22039.07	30939.75	0.96E+09	1.465	-0.55
9	22293.86	31100.40	0.97E+09	1.458	-0.57
10	22531.51	31200.50	0.97E+09	1.449	-0.58

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	100.	200.	472.	2551.	14662.	37539.	104285.	203652.	374755.	659289.
2	174.	346.	804.	4165.	22407.	54881.	144371.	271247.	480511.	814977.
3	243.	466.	1036.	4949.	24725.	58438.	148321.	272582.	473882.	790355.
4	298.	565.	1234.	5643.	26654.	60839.	148174.	264636.	447556.	727102.
5	345.	640.	1365.	5994.	27393.	61662.	148335.	263126.	442796.	716483.
6	395.	714.	1484.	6262.	27844.	62121.	148622.	263196.	443075.	717819.
7	448.	792.	1602.	6523.	28483.	63432.	152344.	271191.	459885.	751034.
8	509.	884.	1757.	6920.	29307.	64309.	152171.	268401.	451591.	732326.
9	564.	962.	1871.	7136.	29582.	64491.	152047.	268136.	451662.	734019.
10	619.	1038.	1983.	7348.	29873.	64714.	151946.	267799.	451271.	734435.

STATION   : 08145000   BRADY CREEK AT BRADY, TX (DISC)
LOCATION   : LATITUDE N31:08:17, LONGITUDE WO99:20:05
DRAINAGE AREA : 588.OO mi2 (1523. km2)
PERIOD OF RECORD: 06/1939 - 09/1986
GAGE ALTITUDE : 1646.50 (501.8 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8145000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	5296.26	10373.28	0.11E+09	3.569	7.30
2	6833.32	13667.89	0.19E+09	3.618	7.49
3	7022.68	13717.28	0.19E+09	3.587	7.37
4	7257.84	13705.96	0.19E+09	3.554	7.26
5	7376.58	13707.28	0.19E+09	3.529	7.18
6	7440.62	13705.49	0.19E+09	3.517	7.14
7	7596.28	13722.38	0.19E+09	3.472	6.97
8	7839.85	13804.37	0.19E+09	3.386	6.65
9	7919.92	13888.02	0.19E+09	3.373	6.60
10	8209.10	14004.39	0.20E+09	3.235	6.09

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	607.	726.	954.	1968.	5473.	10661.	24139.	43469.	76865.	134230.
2	771.	922.	1211.	2500.	6983.	13655.	31077.	56189.	99767.	174948.
3	813.	975.	1283.	2645.	7312.	14157.	31775.	56815.	99737.	172892.
4	807.	990.	1338.	2848.	7890.	15050.	32882.	57322.	97883.	164802.
5	807.	999.	1362.	2933.	8141.	15468.	33525.	58006.	98235.	163902.
6	818.	1014.	1385.	2984.	8261.	15652.	33778.	58245.	98291.	163379.
7	829.	1036.	1426.	3098.	8559.	16128.	34462.	58924.	98533.	162150.
8	819.	1037.	1448.	3214.	8978.	16930.	36048.	61361.	102026.	166707.
9	835.	1055.	1472.	3258.	9077.	17097.	36362.	61852.	102784.	167869.
10	822.	1051.	1484.	3356.	9506.	18020.	38506.	65635.	109185.	178318.

STATION   : 08146000   SAN SABA RIVER AT SAN SABA, TX
LOCATION   : LATITUDE N31:12:47, LONGITUDE WO98:43:09
DRAINAGE AREA   : 3046.00 mi2 (7891. km2)
PERIOD OF RECORD: 10/1915 - 09/1990
GAGE ALTITUDE   : 1162.16 (354.2 m)
TOTAL PERIOD OF RECORD: 64 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8146000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22645.79	34482.95	0.12E+10	4.162	19.58
2	35241.27	60256.95	0.36E+10	4.834	25.05
3	43119.21	80369.82	0.65E+10	5.452	31.28
4	47130.57	90119.28	0.81E+10	5.651	33.26
5	49162.04	92910.40	0.86E+10	5.675	33.55
6	50829.23	94831.27	0.90E+10	5.685	33.71
7	52845.88	97098.48	0.94E+10	5.544	32.12
8	54971.19	99194.10	0.98E+10	5.364	30.11
9	56682.31	101021.48	0.10E+11	5.216	28.45
10	58098.77	102290.04	0.10E+11	5.130	27.55

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1616.	2500.	4234.	11544.	31273.	52505.	91050.	129800.	178326.	238643.
2	2641.	3961.	6513.	17203.	46607.	79331.	141005.	205252.	288608.	395503.
3	3291.	4830.	7782.	20187.	55138.	95331.	173767.	258117.	371053.	519902.
4	3867.	5543.	8716.	21908.	59205.	102704.	189050.	283876.	413019.	586489.
5	4321.	6116.	9483.	23290.	61829.	106510.	194910.	291937.	424014.	601544.
6	4659.	6557.	10097.	24482.	64197.	109903.	199817.	298078.	431376.	610015.
7	4959.	6940.	10626.	25555.	66753.	114255.	207951.	310722.	450539.	638559.
8	5244.	7307.	11138.	26639.	69476.	119026.	217106.	325152.	472644.	671743.
9	5548.	7665.	11584.	27421.	71380.	122605.	224813.	338465.	494767.	707503.
10	5806.	7981.	12001.	28205.	73172.	125664.	230641.	347747.	509203.	729609.

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STATION : 8148500   NORTH LLANO RIVER NEAR JUNCTION, TEX (DISC)
LOCATION : LATITUDE N30:31:06, LONGITUDE WO99:48:39
DRAINAGE AREA : 914.00 mi2 (2367. km2)
PERIOD OF RECORD: 10/1915 - 10/1977
GAGE ALTITUDE : 1699.92 (518.1 m)
TOTAL PERIOD OF RECORD: 63 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8148500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13701.28	20063.04	0.40E+09	1.926	2.55
2	17835.91	26631.63	0.71E+09	2.173	3.86
3	19974.47	30607.78	0.94E+09	2.350	5.06
4	21199.29	32866.52	0.11E+10	2.493	6.09
5	21832.30	33436.03	0.11E+10	2.454	5.96
6	22632.81	35144.70	0.12E+10	2.525	6.17
7	22941.08	35521.57	0.13E+10	2.532	6.20
8	23175.64	35703.28	0.13E+10	2.526	6.17
9	23399.39	35853.81	0.13E+10	2.517	6.13
10	23742.17	36201.37	0.13E+10	2.507	6.07

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	179.	360.	829.	3952.	18059.	39262.	88790.	149377.	237216.	361499.
2	274.	532.	1181.	5321.	23375.	50139.	112303.	188301.	298671.	455353.
3	331.	627.	1354.	5899.	25610.	55076.	124452.	210608.	337604.	520743.
4	373.	694.	1478.	6299.	26997.	57896.	130799.	221638.	356131.	550919.
5	407.	750.	1577.	6595.	27873.	59468.	133830.	226375.	363436.	561986.
6	441.	803.	1668.	6855.	28674.	61039.	137359.	232596.	374196.	580030.
7	472.	851.	1750.	7063.	29110.	61570.	137745.	232477.	373063.	577063.
8	501.	898.	1829.	7269.	29515.	61969.	137591.	231115.	369342.	569170.
9	526.	938.	1901.	7460.	29921.	62413.	137614.	230109.	366238.	562270.
10	549.	977.	1970.	7672.	30489.	63269.	138689.	230997.	366305.	560437.

STATION : 8150000
LOCATION : LLANO RIVER NR JUNCTION, TX
  LATITUDE N30:29:51, LONGITUDE W099:43:19
DRAINAGE AREA : 1856.00 mi2 (4808. km2)
PERIOD OF RECORD: 10/1915 - 09/1990
GAGE ALTITUDE : 1636.32 (498.7 m)
TOTAL PERIOD OF RECORD: 75 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8150000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	25375.50	38669.88	0.15E+10	3.104	12.30
2	34380.67	49130.61	0.24E+10	2.499	7.04
3	38873.77	55212.31	0.30E+10	2.301	5.23
4	41392.69	58110.86	0.34E+10	2.198	4.44
5	43309.72	60599.94	0.37E+10	2.157	4.03
6	44684.70	62382.23	0.39E+10	2.152	3.91
7	45615.71	63240.42	0.40E+10	2.143	3.84
8	46302.81	63652.39	0.41E+10	2.135	3.80
9	46921.25	63991.20	0.41E+10	2.128	3.77
10	47534.17	64262.15	0.41E+10	2.122	3.75

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	377.	767.	1774.	8237.	35221.	72746.	154006.	246623.	373078.	541748.
2	627.	1233.	2745.	11962.	48512.	97900.	202806.	320817.	480561.	692202.
3	819.	1553.	3328.	13744.	54075.	108438.	224581.	356576.	537218.	779557.
4	974.	1808.	3784.	15050.	57543.	114105.	234103.	369997.	555683.	804679.
5	1126.	2042.	4173.	16022.	59879.	117937.	241074.	380898.	572663.	831017.
6	1281.	2276.	4546.	16859.	61521.	120203.	244351.	385386.	579146.	840889.
7	1421.	2484.	4875.	17574.	62784.	121670.	245665.	386219.	579162.	839800.
8	1559.	2686.	5189.	18233.	63811.	122599.	245633.	384574.	574872.	831546.
9	1695.	2884.	5493.	18852.	64738.	123379.	245387.	382651.	570221.	822788.
10	1826.	3076.	5793.	19489.	65751.	124279.	245193.	380493.	564730.	811990.

STATION : 8150700   LLANO RIVER NR MASON, TX
LOCATION   : LATITUDE N30:39:38, LONGITUDE W099:06:32
DRAINAGE AREA   :   3247.00 mi2 (8411.   km2)
PERIOD OF RECORD: 03/1968 - 09/1990
GAGE ALTITUDE :   1230.36 (375.0 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8150700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	36677.75	38433.39	0.15E+10	1.401	0.49
2	49594.98	50251.51	0.25E+10	1.299	0.17
3	54233.80	52115.98	0.27E+10	1.171	-0.06
4	56810.59	53207.38	0.28E+10	1.131	-0.12
5	58660.21	54085.84	0.29E+10	1.118	-0.13
6	60180.93	54562.86	0.30E+10	1.098	-0.15
7	61719.41	54750.98	0.30E+10	1.080	-0.17
8	62979.60	55099.86	0.30E+10	1.072	-0.17
9	64446.00	55349.87	0.31E+10	1.039	-0.21
10	65801.58	55557.82	0.31E+10	1.008	-0.24

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	954.	2114.	5076.	21133.	64632.	103673.	158669.	200908.	242460.	282568.
2	1538.	3300.	7641.	29917.	86975.	136409.	204424.	255729.	305561.	353176.
3	1978.	4135.	9286.	34422.	95228.	145830.	213451.	263246.	310728.	355446.
4	2388.	4837.	10509.	37048.	99021.	149763.	217092.	266528.	313666.	358049.
5	2773.	5463.	11531.	38962.	101381.	152016.	219080.	268398.	315586.	360123.
6	3143.	6059.	12494.	40730.	103346.	153515.	219573.	268012.	314323.	357999.
7	3499.	6666.	13543.	42898.	105747.	154754.	217965.	263498.	306422.	346461.
8	3847.	7215.	14412.	44443.	107373.	155866.	217999.	262559.	304463.	343470.
9	4209.	7787.	15325.	46143.	109468.	157718.	219134.	262980.	304098.	342286.
10	4552.	8325.	16180.	47730.	111418.	159428.	220134.	263266.	303583.	340932.

STATION : 8151000   LLANO RIVER NR CASTELL, TEX (DISC)
LOCATION   : LATITUDE N30:43:00, LONGITUDE WO98:53:00
DRAINAGE AREA : 3747.00 mi2 (9707. km2)
PERIOD OF RECORD: 12/1923 - 09/1939
GAGE ALTITUDE : 1121.77 (341.9 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8151000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	77670.09	108211.51	0.12E+11	2.730	4.43
2	104386.13	150655.56	0.23E+11	2.806	4.66
3	113040.14	156096.33	0.24E+11	2.631	4.06
4	118565.83	159590.83	0.25E+11	2.498	3.58
5	121225.79	161050.77	0.26E+11	2.449	3.40
6	124413.63	162499.00	0.26E+11	2.374	3.15
7	126735.22	163593.75	0.27E+11	2.326	2.99
8	128451.84	164423.97	0.27E+11	2.297	2.89
9	129775.48	165008.84	0.27E+11	2.282	2.83
10	130891.64	165507.14	0.27E+11	2.272	2.80

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5935.	8794.	14342.	38173.	107305.	188584.	350143.	526587.	765800.	1084712.
2	9146.	12736.	19550.	48629.	136863.	247686.	485051.	765948.	1173090.	1755740.
3	10744.	14686.	22106.	53463.	148417.	268100.	527122.	836493.	1289553.	1944261.
4	11879.	16027.	23794.	56449.	155389.	280576.	553853.	882734.	1368327.	2075508.
5	12783.	17047.	24991.	58183.	158457.	285373.	563672.	899935.	1398844.	2128763.
6	13799.	18183.	26326.	60147.	162099.	291453.	576350.	922619.	1439078.	2199171.
7	14487.	18981.	27308.	61734.	165098.	296045.	584312.	934837.	1457923.	2228458.
8	15038.	19623.	28102.	63021.	167396.	299286.	589124.	941208.	1466233.	2239267.
9	15533.	20200.	28814.	64143.	169223.	301568.	591673.	943438.	1467233.	2237529.
10	15997.	20736.	29465.	65129.	170728.	303337.	593375.	944511.	1466734.	2233957.

STATION: : 8151500   LLANO RIVER AT LLANO, TX
LOCATION   : LATITUDE N30:45:04, LONGITUDE W098:40:10
DRAINAGE AREA   : 4197.00 mi2 (10873 km2)
PERIOD OF RECORD: 10/1939 - 09/1990
GAGE ALTITUDE   : 970.01 (295.6 m)
TOTAL PERIOD OF RECORD: 51 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8151500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	38403.04	37185.53	0.14E+10	0.964	-0.41
2	56292.90	53653.94	0.29E+10	1.047	-0.02
3	63020.95	57709.52	0.33E+10	0.969	-0.24
4	67254.69	59740.49	0.36E+10	0.897	-0.42
5	70063.59	60975.67	0.37E+10	0.855	-0.51
6	72354.61	61976.56	0.38E+10	0.826	-0.57
7	74777.88	62989.32	0.40E+10	0.771	-0.68
8	76800.13	63668.61	0.41E+10	0.735	-0.74
9	78828.80	64784.76	0.42E+10	0.720	-0.74
10	80618.47	65495.06	0.43E+10	0.682	-0.81

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1784.	3384.	6933.	23238.	63454.	99378.	151872.	194204.	237988.	282506.
2	2817.	5264.	10613.	34695.	93066.	144763.	220015.	280574.	343164.	406798.
3	3487.	6447.	12811.	40541.	104698.	159427.	236625.	297106.	358322.	419345.
4	4023.	7372.	14476.	44629.	111915.	167674.	244447.	303371.	362061.	419687.
5	4467.	8094.	15698.	47350.	116483.	172957.	249933.	308544.	366587.	423288.
6	4882.	8751.	16768.	49585.	120056.	177042.	254227.	312728.	370488.	426775.
7	5260.	9345.	17737.	51694.	123918.	182075.	260735.	320330.	379185.	436578.
8	5617.	9922.	18700.	53776.	127230.	185700.	264083.	323031.	380922.	437084.
9	5937.	10420.	19504.	55507.	130396.	189833.	269445.	329309.	388115.	445198.
10	6234.	10887.	20267.	57152.	133260.	193367.	273620.	333825.	392873.	450116.

STATION : 8152000
LOCATION : LATITUDE N30:33:30, LONGITUDE W098:28:19   SANDY CREEK NR KINGSLAND, TX
DRAINAGE AREA : 346.00 mi2 (896.3 km2)
PERIOD OF RECORD: 10/1966 - 09/1990
GAGE ALTITUDE : 862.31 (262.8 m)
TOTAL PERIOD OF RECORD: 23 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8152000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	6524.84	4068.25	0.17E+08	0.487	-1.27
2	9102.84	5502.55	0.30E+08	0.463	-1.13
3	10420.47	6439.01	0.41E+08	0.522	-1.13
4	11182.81	7044.73	0.50E+08	0.605	-1.02
5	11995.60	7644.12	0.58E+08	0.564	-1.09
6	12689.56	8175.17	0.67E+08	0.602	-0.98
7	13260.71	8516.62	0.73E+08	0.590	-0.94
8	13780.81	8722.64	0.76E+08	0.566	-0.91
9	14251.54	8949.12	0.80E+08	0.570	-0.83
10	14724.99	9468.82	0.90E+08	0.737	-0.39

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1487.	2025.	2898.	5465.	9686.	12746.	16788.	19865.	22956.	26091.
2	2020.	2814.	4099.	7826.	13627.	17584.	22511.	26059.	29470.	32761.
3	2282.	3176.	4629.	8877.	15603.	20266.	26158.	30457.	34633.	38709.
4	2407.	3357.	4908.	9472.	16767.	21863.	28340.	33093.	37727.	42269.
5	2471.	3481.	5142.	10091.	18096.	23724.	30899.	36174.	41321.	46368.
6	2543.	3605.	5361.	10635.	19214.	25260.	32969.	38634.	44159.	49569.
7	2628.	3741.	5586.	11131.	20125.	26432.	34432.	40277.	45956.	51485.
8	2724.	3902.	5852.	11683.	20964.	27334.	35252.	40926.	46355.	51545.
9	2799.	4032.	6074.	12159.	21723.	28191.	36114.	41716.	47019.	52031.
10	2865.	4122.	6210.	12470.	22439.	29267.	37726.	43768.	49534.	55027.

STATION : 8152900   PEDERNALES RIVER NR FREDERICKSBURG, TX
LOCATION   : LATITUDE N30:13:13, LONGITUDE WO98:52:10
DRAINAGE AREA : 369.00 mi2 (955.9 km2)
PERIOD OF RECORD: 06/1979 - 09/1990
GAGE ALTITUDE : 1564.96 (476.9 m)
TOTAL PERIOD OF RECORD: 10 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8152900

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	6126.55	5634.02	0.32E+08	1.949	1.08
2	7326.15	6032.38	0.36E+08	1.510	0.26
3	7868.63	6247.45	0.39E+08	1.325	-0.05
4	8246.08	6395.20	0.41E+08	1.246	-0.20
5	8558.28	6523.64	0.43E+08	1.174	-0.34
6	9017.26	6815.96	0.46E+08	0.995	-0.75
7	9661.69	7493.82	0.56E+08	0.888	-1.18
8	10116.30	7741.08	0.60E+08	0.842	-1.23
9	10483.24	7935.85	0.63E+08	0.800	-1.26
10	10822.22	8117.89	0.66E+08	0.757	-1.29

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	998.	1379.	2042.	4334.	9208.	13657.	20798.	27296.	34848.	43621.
2	1246.	1745.	2603.	5471.	11178.	16053.	23424.	29763.	36793.	44596.
3	1333.	1883.	2830.	5970.	12092.	17196.	24746.	31097.	38010.	45546.
4	1454.	2041.	3046.	6332.	12636.	17830.	25445.	31802.	38682.	46144.
5	1557.	2173.	3221.	6619.	13078.	18369.	26097.	32531.	39482.	47008.
6	1618.	2262.	3361.	6944.	13808.	19467.	27775.	34722.	42256.	50439.
7	1679.	2340.	3474.	7252.	14764.	21188.	30924.	39316.	48644.	59025.
8	1732.	2436.	3648.	7667.	15549.	22169.	32033.	40391.	49547.	59589.
9	1777.	2515.	3787.	7996.	16174.	22964.	32968.	41351.	50448.	60333.
10	1817.	2585.	3910.	8293.	16749.	23713.	33885.	42340.	51447.	61279.

STATION : 8153000
LOCATION : LATITUDE N30:15:00, LONGITUDE W098:40:00
DRAINAGE AREA : 647.00 mi2 (1676. km2)
PERIOD OF RECORD: 08/1924 - 09/1934
GAGE ALTITUDE : 1420.12 (432.8 m)
TOTAL PERIOD OF RECORD: 10 YRS.

PEDERNALES R AT STONEWALL, TEX (DISC)

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8153000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10575.87	8814.04	0.78E+08	1.354	-0.11
2	12896.93	10288.19	0.11E+09	1.169	-0.33
3	13897.39	11789.30	0.14E+09	1.420	0.11
4	14232.60	12152.26	0.15E+09	1.437	0.13
5	14562.84	12366.30	0.15E+09	1.372	0.01
6	14743.81	12491.91	0.16E+09	1.348	-0.04
7	15443.78	12702.95	0.16E+09	1.306	0.00
8	15812.53	13004.54	0.17E+09	1.328	0.07
9	16536.54	13270.30	0.18E+09	1.154	-0.19
10	16740.88	13397.49	0.18E+09	1.129	-0.24

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1842.	2515.	3674.	7626.	15927.	23465.	35537.	46510.	59273.	74103.
2	2115.	2985.	4494.	9586.	19833.	28640.	42010.	53538.	66341.	80572.
3	2159.	3049.	4608.	10000.	21298.	31376.	47168.	61191.	77143.	95287.
4	2189.	3095.	4685.	10202.	21815.	32210.	48546.	63089.	79664.	98553.
5	2201.	3127.	4759.	10437.	22397.	33082.	49832.	64697.	81593.	100790.
6	2217.	3156.	4810.	10570.	22699.	33523.	50471.	65490.	82543.	101893.
7	2221.	3245.	5066.	11365.	24167.	35081.	51415.	65254.	80368.	96884.
8	2244.	3296.	5173.	11672.	24816.	35941.	52465.	66358.	81427.	97792.
9	2244.	3355.	5356.	12313.	26238.	37812.	54656.	68531.	83299.	99063.
10	2259.	3384.	5414.	12477.	26597.	38308.	55308.	69276.	84109.	99906.

STATION : 08153500 PEDERNALES RIVER NR JOHNSON CITY, TX
LOCATION : LATITUDE N30:17:30, LONGITUDE WO98:23:57
DRAINAGE AREA : 901.00 mi2 (2334. km2)
PERIOD OF RECORD: 06/1939 - 09/1990
GAGE ALTITUDE : 1096.70 (334.2 m)
TOTAL PERIOD OF RECORD: 49 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8153500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	26045.33	39683.00	0.16E+10	4.367	20.29
2	33713.18	54874.99	0.30E+10	4.806	23.83
3	36373.75	55776.49	0.31E+10	4.645	22.68
4	37908.55	56240.32	0.32E+10	4.525	21.79
5	39107.54	56614.52	0.32E+10	4.422	21.03
6	40194.88	56974.96	0.32E+10	4.326	20.30
7	41336.76	57229.36	0.33E+10	4.244	19.73
8	42448.88	57513.52	0.33E+10	4.165	19.17
9	43529.05	57883.79	0.34E+10	4.114	18.83
10	44739.05	58331.29	0.34E+10	4.011	18.07

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1934.	2989.	5050.	13634.	36361.	60403.	103399.	146037.	198838.	263763.
2	2466.	3820.	6465.	17479.	46557.	77206.	131822.	185786.	252408.	334076.
3	2766.	4316.	7338.	19729.	51394.	83664.	139402.	192857.	257230.	334233.
4	2972.	4641.	7884.	21047.	54076.	87159.	143421.	196605.	259891.	334722.
5	3110.	4861.	8259.	21990.	56150.	90074.	147327.	201053.	264601.	339297.
6	3411.	5244.	8759.	22788.	57515.	92143.	150990.	206693.	273119.	351883.
7	3604.	5530.	9208.	23780.	59447.	94683.	154094.	209940.	276162.	354267.
8	3718.	5727.	9565.	24723.	61489.	97432.	157436.	213291.	278982.	355828.
9	3832.	5926.	9927.	25671.	63486.	100042.	160421.	216041.	280880.	356070.
10	3954.	6138.	10315.	26696.	65653.	102886.	163723.	219169.	283226.	356849.

STATION : 8154000   PEDERNALES R NR SPICEWOOD, TEX (DISC)
LOCATION : LATITUDE N30:25:15, LONGITUDE WO98:04:50
DRAINAGE AREA : 1294.00 mi2 (3352. km2)
PERIOD OF RECORD: 12/1923 - 07/1939
GAGE ALTITUDE : 624.88 (190.4 m)
TOTAL PERIOD OF RECORD: 15 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8154000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	33857.98	50045.56	0.25E+10	1.911	0.85
2	43473.59	61527.95	0.38E+10	1.860	0.81
3	46546.65	64459.55	0.42E+10	1.863	0.84
4	48467.71	66552.84	0.44E+10	1.852	0.81
5	49422.02	67002.06	0.45E+10	1.842	0.80
6	50140.83	67260.78	0.45E+10	1.836	0.80
7	50741.16	67450.77	0.45E+10	1.831	0.79
8	51742.02	68375.68	0.47E+10	1.859	0.90
9	53187.44	68578.53	0.47E+10	1.836	0.89
10	55085.76	69442.85	0.48E+10	1.771	0.74

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1494.	2300.	3977.	12365.	43073.	86850.	190072.	321796.	524056.	828832.
2	2044.	3194.	5583.	17272.	57788.	112373.	234103.	380988.	596501.	906289.
3	2331.	3656.	6394.	19526.	63285.	120067.	242254.	384719.	587941.	871943.
4	2494.	3905.	6812.	20650.	66241.	124836.	249847.	394532.	599609.	884543.
5	2594.	4073.	7116.	21504.	68225.	127398.	251840.	394041.	593241.	867103.
6	2666.	4201.	7358.	22208.	69835.	129367.	252935.	392496.	585871.	849146.
7	2720.	4303.	7559.	22815.	71231.	131050.	253757.	390888.	579009.	832863.
8	2840.	4508.	7935.	23841.	73288.	133365.	253365.	385339.	563378.	800079.
9	2876.	4646.	8309.	25294.	77042.	137920.	256617.	383304.	549559.	765333.
10	2908.	4761.	8623.	26586.	80917.	143991.	265188.	392616.	557635.	768953.

STATION   : 08158000   COLORADO RIVER AT AUSTIN, TX
LOCATION   : LATITUDE N30:14:40, LONGITUDE W097:41:39
DRAINAGE AREA   : 39009.00 mi2 (10105 km2)
PERIOD OF RECORD : 03/1898 - 09/1990
GAGE ALTITUDE   :   402.27 (122.6 m)
TOTAL PERIOD OF RECORD: 39 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8158000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	126471.70	111973.88	0.13E+11	2.905	8.98
2	208452.67	165837.97	0.28E+11	2.400	6.48
3	272115.94	210381.31	0.44E+11	1.854	3.53
4	321728.19	249562.39	0.62E+11	1.569	2.00
5	361298.47	278153.34	0.77E+11	1.455	1.31
6	395265.09	307139.16	0.94E+11	1.456	1.09
7	424072.78	338409.06	0.11E+12	1.570	1.40
8	449304.81	365546.72	0.13E+12	1.682	1.81
9	471529.03	390584.69	0.15E+12	1.795	2.24
10	492444.00	409759.16	0.17E+12	1.806	2.26

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	35130.	42603.	54710.	93254.	171199.	242676.	360570.	472048.	607076.	770281.
2	53878.	68344.	91532.	162267.	292635.	401228.	564821.	706306.	865479.	1044521.
3	63367.	82939.	114729.	212304.	390298.	535069.	747576.	926873.	1123387.	1339762.
4	70335.	93161.	130644.	247619.	465032.	643966.	908743.	1133480.	1380837.	1654158.
5	77781.	103644.	146184.	278852.	524133.	724474.	1018766.	1266660.	1537759.	1835375.
6	83800.	112029.	158574.	304188.	574140.	794850.	1119162.	1392304.	1690924.	2018616.
7	89608.	119207.	168113.	322433.	613532.	855901.	1217796.	1527382.	1870211.	2251176.
8	94547.	125592.	176950.	339628.	648691.	907871.	1297294.	1632431.	2005377.	2421799.
9	99420.	131654.	185002.	354506.	678787.	952834.	1367459.	1726725.	2128782.	2580218.
10	104556.	137953.	193188.	368969.	707052.	994688.	1432731.	1814556.	2244379.	2729346.

STATION   : 08161000   COLORADO RIVER AT COLUMBUS, TX
LOCATION   : LATITUDE N29:42:22, LONGITUDE W096:32:12
DRAINAGE AREA   : 41460.00 mi2 (10740 km2)
PERIOD OF RECORD: 06/1916 - 09/1990
GAGE ALTITUDE   : 155.52 (47.40 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8161000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	111732.05	75046.34	0.56E+10	1.585	1.05
2	212022.63	140353.89	0.20E+11	1.264	0.07
3	293814.72	204572.53	0.42E+11	1.212	-0.08
4	362977.34	253722.61	0.64E+11	1.068	-0.48
5	421498.06	301136.97	0.91E+11	1.033	-0.62
6	467686.84	339162.03	0.12E+12	1.021	-0.67
7	507967.00	375395.44	0.14E+12	1.067	-0.57
8	543478.44	407498.09	0.17E+12	1.128	-0.41
9	578716.44	440248.53	0.19E+12	1.180	-0.24
10	612986.56	467860.56	0.22E+12	1.202	-0.12

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	38759.	45566.	56308.	88955.	150961.	205076.	291109.	369815.	462812.	572562.
2	67338.	81398.	103525.	169980.	292598.	396640.	556781.	699038.	862867.	1051485.
3	82680.	102529.	134189.	231059.	412748.	567905.	807457.	1019673.	1263911.	1544134.
4	95923.	120934.	161086.	284559.	515831.	711854.	1011913.	1275073.	1575204.	1916557.
5	105816.	134647.	181307.	326542.	602467.	838478.	1202031.	1522528.	1889213.	2307656.
6	113901.	145620.	197216.	359191.	670305.	938551.	1354294.	1722682.	2145795.	2630378.
7	121833.	155735.	211074.	386282.	727425.	1025267.	1491920.	1909326.	2392828.	2950592.
8	129262.	165151.	223853.	410667.	777485.	1100277.	1609526.	2067767.	2601484.	3220039.
9	134628.	172615.	234966.	434533.	829204.	1178266.	1731053.	2230049.	2812570.	3489175.
10	139872.	180344.	246919.	460213.	881348.	1252390.	1837470.	2363560.	2975023.	3682826.

STATION : 8164000   LAVACA RIVER NR EDNA, TX
LOCATION : LATITUDE N28:57:35, LONGITUDE W096:41:10
DRAINAGE AREA : 817.00 mi2 (2116. km2)
PERIOD OF RECORD: 09/1938 - 09/1990
GAGE ALTITUDE : 14.10 (4.297 m)
TOTAL PERIOD OF RECORD: 52 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8164000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	24916.10	21791.09	0.47E+09	2.040	4.09
2	43452.71	38517.52	0.15E+10	2.202	5.04
3	53767.74	45719.46	0.21E+10	1.907	3.82
4	60051.31	50075.91	0.25E+10	1.816	3.59
5	63839.16	51818.50	0.27E+10	1.696	3.20
6	66901.52	53417.63	0.29E+10	1.604	2.84
7	69428.20	54336.39	0.30E+10	1.504	2.44
8	71821.16	55512.13	0.31E+10	1.396	1.99
9	74581.23	57667.75	0.33E+10	1.322	1.55
10	77242.79	60403.71	0.36E+10	1.338	1.48

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2840.	4700.	8159.	19844.	39341.	52264.	67248.	77174.	85986.	93828.
2	4228.	7470.	13761.	35437.	69953.	90882.	113023.	126335.	137196.	146150.
3	4932.	8930.	16831.	44333.	87576.	113023.	139089.	154213.	166193.	175743.
4	5326.	9792.	18717.	49931.	98399.	126293.	154217.	170052.	182340.	191940.
5	5585.	10389.	20053.	53783.	105043.	133703.	161596.	176994.	188650.	197549.
6	5799.	10876.	21139.	56887.	110332.	139555.	167375.	182407.	193554.	201900.
7	6061.	11410.	22226.	59653.	114572.	143941.	171315.	185802.	196332.	204064.
8	6237.	11776.	23002.	61872.	118714.	148942.	176946.	191675.	202313.	210075.
9	6378.	12074.	23656.	63999.	123468.	155308.	184970.	200650.	212030.	220372.
10	6501.	12331.	24222.	65905.	127944.	161460.	192924.	209678.	221919.	230953.

STATION : 8164300   NAVIDAD RIVER NR HALLETTSVILLE, TX
LOCATION : LATITUDE N29:28:00, LONGITUDE W096:48:45
DRAINAGE AREA : 332.00 mi2 (860.1 km2)
PERIOD OF RECORD: 10/1961 - 09/1990
GAGE ALTITUDE : 159.28 (48.54 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8164300

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	18054.72	15567.78	0.24E+09	1.349	1.05
2	27026.98	23648.95	0.56E+09	1.343	0.96
3	30775.67	26807.25	0.72E+09	1.285	0.63
4	32238.45	27906.20	0.78E+09	1.286	0.60
5	33439.96	28279.47	0.80E+09	1.228	0.46
6	34822.37	28799.88	0.83E+09	1.120	0.21
7	35993.71	29286.38	0.86E+09	1.049	0.02
8	36858.52	29568.42	0.86E+09	1.007	-0.06
9	37469.15	29756.56	0.89E+09	0.976	-0.11
10	38186.35	30220.54	0.91E+09	0.945	-0.19

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1612.	2725.	4897.	13084.	29371.	42017.	58796.	71351.	83664.	95620.
2	2353.	4003.	7243.	19517.	43953.	62874.	87866.	106481.	124662.	142239.
3	2596.	4483.	8221.	22424.	50342.	71531.	98892.	118835.	137957.	156098.
4	2732.	4737.	8711.	23742.	52842.	74561.	102139.	121930.	140658.	158193.
5	2850.	4989.	9235.	25149.	55089.	76707.	103317.	121850.	138944.	154611.
6	2930.	5175.	9655.	26452.	57690.	79867.	106721.	125114.	141825.	156970.
7	3010.	5358.	10056.	27633.	59868.	82333.	109059.	127039.	143112.	157503.
8	3230.	5665.	10485.	28333.	61083.	84122.	111851.	130748.	147855.	163314.
9	3375.	5876.	10793.	28880.	61976.	85303.	113470.	132746.	150269.	166153.
10	3435.	5979.	10981.	29401.	63191.	87070.	115970.	135792.	153846.	170235.

STATION   : 08164350   NAVIDAD RIVER NR SPEAKS, TX
LOCATION   : LATITUDE N29:19:18, LONGITUDE WO96:42:32
DRAINAGE AREA   : 437.00 mi2 (1132. km2)
PERIOD OF RECORD: 10/1981 - 11/1989
GAGE ALTITUDE   : 120.00 (36.57 m)
TOTAL PERIOD OF RECORD: 8 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8164350

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	11535.62	7302.26	0.53E+08	0.973	-0.81
2	19875.37	11859.31	0.14E+09	0.587	-1.05
3	23844.79	14572.65	0.21E+09	0.549	-1.23
4	25628.43	15209.73	0.23E+09	0.354	-1.33
5	26579.01	15380.75	0.24E+09	0.212	-1.38
6	27827.11	15422.61	0.24E+09	0.045	-1.36
7	28941.82	15853.40	0.25E+09	-.049	-1.42
8	29905.29	16714.29	0.28E+09	0.001	-1.50
9	31113.97	18197.86	0.33E+09	0.199	-1.47
10	32686.37	20693.42	0.43E+09	0.569	-1.25

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2855.	3834.	5401.	9919.	17198.	22415.	29257.	34443.	39638.	44896.
2	4514.	6348.	9302.	17707.	30208.	38337.	48015.	54704.	60929.	66724.
3	5277.	7414.	10878.	20919.	36374.	46758.	59486.	68513.	77090.	85240.
4	5550.	7911.	11752.	22799.	39296.	49991.	62642.	71323.	79351.	86772.
5	5719.	8223.	12301.	23930.	40841.	51482.	63696.	71850.	79219.	85874.
6	5924.	8681.	13173.	25714.	42843.	52851.	63585.	70284.	75990.	80907.
7	6052.	8957.	13708.	26939.	44694.	54811.	65403.	71846.	77203.	81739.
8	6152.	9101.	13945.	27588.	46304.	57221.	68884.	76126.	82260.	87526.
9	6244.	9201.	14092.	28159.	48338.	60684.	74430.	83321.	91131.	98015.
10	6295.	9215.	14089.	28599.	50958.	65682.	83208.	95274.	106442.	116760.

STATION : 8164500   NAVIDAD RIVER NR GANADO, TEX (DISC)
LOCATION   : LATITUDE N29:01:32, LONGITUDE WO96:33:08
DRAINAGE AREA :   826.00 mi2 (2139. km2)
PERIOD OF RECORD: 06/1939 - 05/1980
GAGE ALTITUDE : 13.62 (4.151 m)
TOTAL PERIOD OF RECORD: 42 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8164500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	33897.89	32042.33	0.10E+10	2.440	5.63
2	61009.16	54544.77	0.30E+10	2.317	5.52
3	81691.53	71132.11	0.51E+10	2.323	5.87
4	96239.39	80124.55	0.64E+10	2.061	4.67
5	105932.64	86733.87	0.75E+10	1.974	4.48
6	112681.16	90294.27	0.82E+10	1.852	4.05
7	116978.57	92451.46	0.85E+10	1.801	3.90
8	120243.31	93610.62	0.88E+10	1.750	3.78
9	123302.20	94483.27	0.89E+10	1.681	3.56
10	126394.12	95768.34	0.92E+10	1.643	3.49

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4606.	7141.	11648.	26403.	51641.	69433.	91591.	107387.	122370.	136508.
2	7738.	12575.	21346.	49784.	94772.	123357.	155462.	176134.	194061.	209736.
3	9749.	16430.	28781.	68637.	128378.	163456.	199978.	221722.	239372.	253881.
4	10806.	18797.	33871.	82630.	153053.	192003.	230197.	251563.	268012.	280790.
5	11380.	20137.	36875.	91470.	169660.	212085.	252818.	275135.	291974.	304812.
6	11786.	21109.	39086.	97961.	181438.	225914.	267797.	290301.	306964.	319441.
7	12116.	21852.	40708.	102407.	188800.	234010.	275816.	297874.	313916.	325719.
8	12364.	22437.	42014.	105991.	194507.	240047.	281429.	302876.	318197.	329268.
9	12594.	22998.	43282.	109451.	199823.	245505.	286309.	307076.	321690.	332074.
10	12806.	23534.	44512.	112856.	205132.	251044.	291458.	311694.	325789.	335673.

STATION : 8167000   GUADALUPE RIVER AT COMFORT, TX
LOCATION : LATITUDE N29:58:10, LONGITUDE W098:53:33
DRAINAGE AREA : 839.00 mi2 (2173. km2)
PERIOD OF RECORD: 06/1939 - 09/1990
GAGE ALTITUDE : 1369.83 (417.5 m)
TOTAL PERIOD OF RECORD: 52 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8167000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	16959.90	24812.41	0.62E+09	3.372	12.55
2	24101.92	39778.51	0.16E+10	4.345	20.03
3	26694.32	42039.16	0.18E+10	4.075	17.58
4	28178.27	42720.18	0.18E+10	3.989	17.00
5	29386.05	43155.12	0.19E+10	3.927	16.63
6	30511.90	43605.98	0.19E+10	3.869	16.30
7	31519.69	43954.64	0.19E+10	3.812	15.95
8	32666.51	44354.14	0.20E+10	3.732	15.46
9	33659.73	44785.03	0.20E+10	3.651	14.93
10	34494.25	45177.91	0.20E+10	3.586	14.49

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	725.	1254.	2395.	7865.	24327.	42824.	76949.	111258.	153929.	206332.
2	1073.	1832.	3451.	11086.	33742.	59040.	105577.	152323.	210469.	281927.
3	1275.	2168.	4057.	12794.	37978.	65405.	114781.	163420.	222970.	295049.
4	1432.	2429.	4525.	14049.	40704.	68998.	118782.	166830.	224660.	293565.
5	1577.	2668.	4945.	15130.	42929.	71820.	121713.	169076.	225308.	291475.
6	1711.	2885.	5321.	16084.	44931.	74470.	124835.	172117.	227740.	292650.
7	1857.	3113.	5701.	16979.	46675.	76679.	127290.	174369.	229355.	293105.
8	1984.	3321.	6063.	17915.	48711.	79478.	130867.	178255.	233204.	296491.
9	2096.	3498.	6365.	18673.	50382.	81859.	134164.	182187.	237680.	301395.
10	2220.	3687.	6671.	19365.	51725.	83617.	136323.	184503.	239995.	303522.

STATION : 8167500   GUADALUPE RIVER NR SPRING BRANCH, TX
LOCATION : LATITUDE N29:51:38, LONGITUDE WO98:22:58
DRAINAGE AREA : 1315.00 mi2 (3406. km2)
PERIOD OF RECORD: 07/1922 - 09/1990
GAGE ALTITUDE : 948.10 (288.9 m)
TOTAL PERIOD OF RECORD: 68 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8167500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	23343.06	30666.78	0.94E+09	2.521	6.04
2	32785.78	42887.32	0.18E+10	2.891	8.99
3	37309.59	46138.34	0.21E+10	2.688	7.82
4	40485.01	48128.25	0.23E+10	2.540	7.05
5	43065.04	49569.52	0.25E+10	2.413	6.39
6	45271.63	50815.39	0.26E+10	2.314	5.89
7	47358.14	52272.07	0.27E+10	2.222	5.36
8	49368.13	53500.68	0.29E+10	2.136	4.90
9	51329.79	54983.39	0.30E+10	2.064	4.46
10	53096.53	56535.14	0.32E+10	2.025	4.18

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1282.	2146.	3937.	11929.	33912.	57040.	97537.	136508.	183352.	239114.
2	1979.	3272.	5915.	17405.	48007.	79456.	133507.	184726.	245555.	317185.
3	2389.	3953.	7132.	20695.	55602.	90361.	148403.	201980.	264218.	336033.
4	2687.	4448.	8015.	23062.	60997.	98062.	158892.	214164.	277519.	349736.
5	2931.	4862.	8766.	25092.	65491.	104252.	166785.	222712.	285952.	357145.
6	3147.	5223.	9414.	26813.	69283.	109504.	173614.	230319.	293835.	364721.
7	3336.	5541.	9984.	28345.	72755.	114449.	180373.	238252.	302671.	374147.
8	3496.	5823.	10517.	29864.	76254.	119388.	186941.	245709.	310591.	382049.
9	3638.	6072.	10984.	31215.	79537.	124260.	193964.	254323.	320687.	393499.
10	3790.	6326.	11442.	32452.	82379.	128365.	199725.	261269.	328716.	402478.

STATION   : 08168500   GUADALUPE RIVER AB COMAL R AT NEW BRAUNFELS, TX
LOCATION   : LATITUDE N29:42:53, LONGITUDE W098:06:35
DRAINAGE AREA   : 1518.00 mi2 (3932. km2)
PERIOD OF RECORD: 01/1928 - 09/1990
GAGE ALTITUDE   : 586.65 (178.8 m)
TOTAL PERIOD OF RECORD: 34 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8168500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	23388.63	31214.82	0.97E+09	2.015	2.55
2	34969.47	46346.46	0.21E+10	2.008	2.39
3	39372.08	48789.25	0.24E+10	1.867	1.98
4	42584.37	50510.93	0.26E+10	1.757	1.63
5	45047.60	51675.28	0.27E+10	1.696	1.47
6	47273.76	52842.23	0.28E+10	1.637	1.31
7	49378.74	53928.86	0.29E+10	1.574	1.14
8	51386.02	54895.27	0.30E+10	1.520	1.00
9	53212.62	55874.37	0.31E+10	1.473	0.88
10	54829.09	56764.95	0.32E+10	1.435	0.78

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1839.	2580.	4007.	10258.	30004.	55616.	112124.	180711.	282271.	430565.
2	2631.	3751.	5920.	15475.	45499.	84084.	177912.	268284.	414860.	626093.
3	3208.	4608.	7296.	18823.	53155.	95083.	181830.	280915.	420140.	613115.
4	3641.	5257.	8342.	21343.	58738.	102893.	191411.	289402.	423702.	605140.
5	4060.	5871.	9303.	23518.	63096.	108443.	196892.	292218.	420132.	589251.
6	4408.	6377.	10094.	25318.	66864.	113594.	203224.	298255.	424141.	588410.
7	4714.	6829.	10813.	26986.	70419.	118521.	209460.	304660.	429322.	590334.
8	4988.	7253.	11511.	28657.	73944.	123254.	214973.	309618.	431904.	588001.
9	5236.	7629.	12121.	30102.	77044.	127559.	220477.	315419.	436976.	590906.
10	5520.	8028.	12722.	31386.	79627.	131111.	225137.	320621.	442229.	595501.

STATION   : 8169500   GUADALUPE RIVER AT NEW BRAUNFELS, TX
LOCATION   : LATITUDE N29:41:52, LONGITUDE WO98:06:23
DRAINAGE AREA :   1652.00 mi2 (4279.   km2)
PERIOD OF RECORD: 02/1915 - 12/1927
GAGE ALTITUDE :   572.55 (174.5 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8169500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	22414.92	21150.38	0.45E+09	0.575	-1.64
2	34148.00	30104.26	0.91E+09	0.487	-1.62
3	40427.68	33470.08	0.11E+10	0.352	-1.68
4	46048.27	37110.85	0.14E+10	0.330	-1.65
5	51270.61	40949.07	0.17E+10	0.357	-1.61
6	55626.74	44469.63	0.20E+10	0.417	-1.55
7	60591.51	49627.08	0.25E+10	0.584	-1.33
8	65507.25	55326.27	0.31E+10	0.768	-1.06
9	69878.11	60324.30	0.36E+10	0.898	-0.87
10	73832.88	64729.55	0.42E+10	1.000	-0.72

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1257.	2164.	4082.	12771.	36526.	61036.	102903.	142178.	188273.	241925.
2	2225.	3798.	7059.	21096.	56474.	90488.	145062.	193464.	247668.	308117.
3	3074.	5162.	9373.	26620.	67074.	103794.	159960.	207754.	259582.	315593.
4	3913.	6442.	11435.	31221.	75979.	115666.	175400.	225599.	279553.	337418.
5	4673.	7581.	13245.	35241.	84106.	127032.	191331.	245214.	303032.	365023.
6	5367.	8584.	14781.	38490.	90641.	136349.	204909.	262514.	324484.	391195.
7	6033.	9525.	16194.	41587.	97823.	147763.	223829.	288747.	359603.	436912.
8	6680.	10412.	17491.	44402.	104714.	159216.	243815.	317382.	399056.	489574.
9	7329.	11287.	18740.	46979.	110737.	169089.	260969.	342020.	433190.	535462.
10	8088.	12274.	20079.	49440.	115928.	177368.	275288.	362755.	462302.	575192.

STATION : 8171000   BLANCO RIVER AT WIMBERLEY, TX
LOCATION : LATITUDE N29:59:39, LONGITUDE W098:05:19
DRAINAGE AREA : 355.00 mi2 (919.6 km2)
PERIOD OF RECORD: 09/1924 - 09/1990
GAGE ALTITUDE : 797.23 (242.9 m)
TOTAL PERIOD OF RECORD: 65 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8171000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8627.40	12730.35	0.16E+09	3.450	12.59
2	11156.02	14754.87	0.22E+09	2.888	8.93
3	12755.00	15777.35	0.25E+09	2.588	7.28
4	14110.08	16733.37	0.28E+09	2.320	5.75
5	15281.79	17502.16	0.31E+09	2.146	4.81
6	16249.14	18159.22	0.33E+09	2.008	4.10
7	17156.18	18731.15	0.35E+09	1.886	3.52
8	17968.69	19275.63	0.37E+09	1.789	3.04
9	18635.30	19694.80	0.39E+09	1.716	2.71
10	19286.72	20164.09	0.41E+09	1.657	2.42

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	240.	498.	1123.	4379.	13354.	21843.	34609.	45082.	56006.	67160.
2	385.	764.	1644.	5990.	17522.	28297.	44514.	57882.	71919.	86372.
3	499.	965.	2021.	7080.	20211.	32389.	50717.	65860.	81813.	98309.
4	592.	1125.	2316.	7928.	22415.	35899.	56354.	73401.	91500.	110378.
5	676.	1271.	2590.	8724.	24400.	38931.	60950.	79303.	98801.	119173.
6	753.	1400.	2822.	9366.	25980.	41374.	64755.	84309.	105146.	127014.
7	821.	1517.	3038.	9980.	27501.	43699.	68296.	88875.	110819.	133879.
8	884.	1624.	3235.	10534.	28850.	45746.	71382.	92830.	115705.	139763.
9	944.	1724.	3414.	11011.	29952.	47370.	73761.	95826.	119353.	144103.
10	1002.	1822.	3585.	11464.	31001.	48928.	76079.	98784.	123002.	148504.

STATION : 08171300 BLANCO RIVER NR KYLE, TX
LOCATION : LATITUDE N29:58:45, LONGITUDE W097:54:35
DRAINAGE AREA : 412.00 mi2 (1067. km2)
PERIOD OF RECORD: 06/1956 - 09/1990
GAGE ALTITUDE : 620.12 (189.0 m)
TOTAL PERIOD OF RECORD: 33 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8171300

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9045.47	8221.03	0.68E+08	1.199	0.60
2	12601.53	11521.89	0.13E+09	1.287	0.77
3	14538.66	12918.46	0.17E+09	1.144	0.40
4	16543.35	14668.44	0.22E+09	1.000	-0.21
5	18123.44	16048.00	0.26E+09	0.993	-0.21
6	19482.47	17231.46	0.30E+09	0.977	-0.26
7	20691.62	18221.77	0.33E+09	0.957	-0.31
8	21848.86	19163.25	0.37E+09	0.929	-0.39
9	22783.05	19899.54	0.40E+09	0.910	-0.44
10	23719.54	20749.48	0.43E+09	0.910	-0.45

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	614.	1061.	1980.	5816.	14793.	22804.	34786.	44747.	55345.	66533.
2	905.	1557.	2882.	8298.	20538.	31137.	46587.	59139.	72264.	85857.
3	1065.	1838.	3402.	9745.	23803.	35743.	52831.	66481.	80565.	94935.
4	1168.	2034.	3801.	11037.	27166.	40867.	60429.	76004.	92028.	108306.
5	1251.	2199.	4145.	12142.	29873.	44789.	65848.	82435.	99344.	116357.
6	1321.	2339.	4437.	13086.	32197.	48172.	70553.	88051.	105779.	123502.
7	1383.	2465.	4706.	13961.	34307.	51175.	74588.	92733.	110978.	129082.
8	1436.	2577.	4950.	14782.	36339.	54106.	78587.	97427.	116257.	134826.
9	1488.	2680.	5166.	15471.	37972.	56408.	81649.	100955.	120151.	138983.
10	1537.	2774.	5360.	16099.	39558.	58764.	85023.	105079.	124994.	144505.

STATION   : 0817200   SAN MARCOS RIVER AT LULING, TX
LOCATION   : LATITUDE N29:39:54, LONGITUDE W097:38:59
DRAINAGE AREA   : 838.00 mi2 (2170. km2)
PERIOD OF RECORD: 05/1939 - 09/1990
GAGE ALTITUDE   : 322.05 (98.16 m)
TOTAL PERIOD OF RECORD: 50 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8172000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	17193.88	14896.81	0.22E+09	1.206	0.65
2	24625.07	20039.86	0.40E+09	0.948	-0.19
3	29046.74	23378.49	0.55E+09	0.949	-0.13
4	32782.26	26216.64	0.69E+09	0.992	0.11
5	35717.56	28987.85	0.84E+09	1.084	0.42
6	37891.72	30798.47	0.95E+09	1.103	0.49
7	39944.69	32319.95	0.10E+10	1.095	0.51
8	41781.03	33669.29	0.11E+10	1.090	0.50
9	43364.75	34906.94	0.12E+10	1.108	0.57
10	45158.84	36646.70	0.13E+10	1.195	0.92

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1743.	2796.	4789.	12137.	27158.	39450.	56789.	70569.	84773.	99364.
2	2687.	4277.	7247.	17935.	39028.	55797.	78894.	96872.	115115.	133545.
3	3222.	5121.	8655.	21306.	46067.	65616.	92386.	113117.	134073.	155158.
4	3659.	5827.	9859.	24236.	52083.	73832.	103308.	125914.	148595.	171214.
5	4019.	6361.	10709.	26218.	56521.	80458.	113288.	138756.	164541.	190540.
6	4351.	6841.	11444.	27792.	59762.	85126.	120109.	147407.	175176.	203346.
7	4660.	7298.	12161.	29361.	62912.	89518.	126234.	154912.	184108.	213768.
8	4963.	7741.	12842.	30798.	65690.	93323.	131451.	161240.	191581.	222431.
9	5274.	8174.	13477.	32031.	67980.	96463.	135843.	166686.	198168.	230276.
10	5577.	8599.	14110.	33327.	70574.	100173.	141251.	173554.	206632.	240507.

STATION   : 08173000   PLUM CREEK NR LULING, TX
LOCATION   : LATITUDE N29:41:58, LONGITUDE W097:36:12
DRAINAGE AREA   : 309.00 mi2 (800.5 km2)
PERIOD OF RECORD : 04/1930 - 09/1990
GAGE ALTITUDE   : 321.57 (98.01 m)
TOTAL PERIOD OF RECORD: 34 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8173000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12726.65	15469.97	0.24E+09	3.545	12.68
2	18286.85	19141.64	0.37E+09	2.541	6.71
3	19951.79	19998.53	0.40E+09	2.442	6.31
4	20903.12	20599.29	0.42E+09	2.426	6.33
5	21850.14	20955.09	0.44E+09	2.317	5.92
6	22410.67	21248.45	0.45E+09	2.196	5.35
7	22819.79	21388.66	0.46E+09	2.139	5.07
8	23623.90	21625.19	0.47E+09	2.074	4.89
9	24165.44	21760.99	0.47E+09	1.998	4.64
10	24514.32	21867.89	0.48E+09	1.955	4.45

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1331.	2026.	3317.	8128.	18798.	28463.	43584.	56864.	71761.	88433.
2	2085.	3131.	5053.	12089.	27442.	41227.	62693.	81490.	102548.	126090.
3	2310.	3516.	5732.	13705.	30337.	44575.	65755.	83519.	102689.	123400.
4	2376.	3662.	6043.	14587.	32077.	46689.	67882.	85221.	103521.	122892.
5	2416.	3784.	6325.	15466.	33872.	48908.	70209.	87246.	104910.	123220.
6	2512.	3897.	6467.	15728.	34671.	50439.	73203.	91740.	111229.	131762.
7	2568.	3988.	6623.	16098.	35376.	51337.	74262.	92844.	112310.	132735.
8	2598.	4094.	6882.	16915.	36971.	53193.	75935.	93942.	112464.	131481.
9	2639.	4180.	7053.	17402.	37975.	54488.	77453.	95496.	113941.	132741.
10	2754.	4332.	7261.	17728.	38433.	55030.	78126.	96295.	114891.	133885.

STATION : 8173500   SAN MARCOS R AT OTTINE, TEX (DISC)
LOCATION : LATITUDE N29:35:36, LONGITUDE WO97:35:22
DRAINAGE AREA : 1249.00 mi2 (3235. km2)
PERIOD OF RECORD: 07/1915 - 01/1943
GAGE ALTITUDE : 285.20 (86.92 m)
TOTAL PERIOD OF RECORD: 28 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8173500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	35315.00	50538.16	0.26E+10	2.989	6.97
2	48615.95	60130.02	0.36E+10	2.711	5.76
3	55197.38	64973.38	0.42E+10	2.595	5.39
4	59127.63	67985.23	0.46E+10	2.565	5.34
5	62291.76	69840.65	0.49E+10	2.536	5.27
6	65003.96	71357.77	0.51E+10	2.508	5.22
7	67835.00	73519.63	0.54E+10	2.529	5.42
8	70725.55	76245.68	0.58E+10	2.567	5.68
9	72880.75	77762.59	0.60E+10	2.579	5.79
10	74819.01	78521.92	0.62E+10	2.555	5.73

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	3447.	4868.	7512.	18170.	47088.	79800.	143130.	211227.	302434.	423056.
2	4892.	7234.	11605.	28559.	69945.	111476.	182964.	251790.	335199.	435840.
3	5726.	8516.	13707.	33550.	80591.	126419.	203210.	275273.	360769.	461804.
4	6268.	9339.	15035.	36612.	86902.	135092.	214657.	288291.	374655.	475581.
5	6741.	10096.	16305.	39542.	92356.	141663.	221164.	293081.	375849.	470790.
6	7207.	10798.	17421.	41971.	96836.	147249.	227406.	298970.	380455.	472952.
7	7664.	11495.	18541.	44435.	101401.	152958.	233840.	305148.	385497.	475803.
8	8147.	12209.	19657.	46818.	105814.	158616.	240645.	312338.	392535.	482079.
9	8543.	12805.	20600.	48810.	109270.	162722.	244853.	315922.	394760.	482117.
10	8921.	13378.	21512.	50734.	112525.	166475.	248441.	318642.	395842.	480712.

STATION   : 08174600   PEACH CREEK BELOW DILWORTH,TEX.(DISC)
LOCATION   : LATITUDE N29:28:26, LONGITUDE W097:18:59
DRAINAGE AREA   : 460.00 mi2 (1191. km2)
PERIOD OF RECORD: 08/1959 - 10/1979
GAGE ALTITUDE   : 213.53 (65.08 m)
TOTAL PERIOD OF RECORD: 20 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8174600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	16126.12	13949.08	0.19E+09	1.639	1.41
2	27430.62	23337.82	0.54E+09	1.760	2.00
3	34796.73	31217.23	0.97E+09	2.239	3.97
4	38351.71	34246.32	0.12E+10	2.175	3.78
5	40617.03	36443.09	0.13E+10	2.193	3.84
6	42207.96	37741.59	0.14E+10	2.197	3.89
7	43773.26	39131.92	0.15E+10	2.174	3.82
8	44854.61	39900.67	0.16E+10	2.142	3.70
9	45755.52	40246.64	0.16E+10	2.099	3.56
10	46340.69	40425.67	0.16E+10	2.059	3.43

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2197.	3299.	5272.	11997.	24930.	35266.	49775.	61335.	73301.	85738.
2	3968.	5902.	9323.	20768.	42259.	59142.	82542.	100990.	119937.	139486.
3	5008.	7441.	11749.	26176.	53358.	74787.	104587.	128151.	152411.	177507.
4	5325.	7984.	12724.	28750.	59128.	83108.	116421.	142715.	169742.	197621.
5	5641.	8448.	13452.	30380.	62555.	88029.	123518.	151606.	180535.	210449.
6	5771.	8704.	13946.	31702.	65228.	91522.	127788.	156213.	185268.	215038.
7	5831.	8861.	14301.	32840.	67897.	95327.	133016.	162431.	192393.	222948.
8	5975.	9094.	14692.	33746.	69627.	97572.	135796.	165504.	195668.	226313.
9	6078.	9292.	15064.	34667.	71214.	99347.	137390.	166636.	196080.	225695.
10	6123.	9398.	15282.	35260.	72290.	100585.	138559.	167539.	196549.	225529.

STATION   : 08175000   SANDIES CREEK NR WESTHOFF, TX
LOCATION   : LATITUDE N29:12:54, LONGITUDE WO97:26:57
DRAINAGE AREA   : 549.00 mi2 (1422. km2)
PERIOD OF RECORD: 04/1930 - 09/1990
GAGE ALTITUDE   : 178.27 (54.33 m)
TOTAL PERIOD OF RECORD: 35 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8175000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15906.93	29900.03	0.89E+09	3.344	8.81
2	24341.62	40583.32	0.16E+10	3.174	8.63
3	28546.38	44797.25	0.20E+10	3.051	8.19
4	31175.51	47291.52	0.22E+10	2.931	7.64
5	32967.55	48719.11	0.24E+10	2.753	6.69
6	34323.18	49606.21	0.25E+10	2.648	6.18
7	35588.35	50277.98	0.25E+10	2.527	5.60
8	36471.57	50795.03	0.26E+10	2.462	5.30
9	37761.13	52028.38	0.27E+10	2.337	4.60
10	38876.58	53206.21	0.28E+10	2.248	4.06

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	258.	574.	1403.	6295.	21768.	37786.	63508.	85724.	109779.	135163.
2	438.	995.	2469.	10970.	35893.	59665.	94785.	122882.	151427.	179707.
3	550.	1270.	3175.	13916.	43499.	69868.	106455.	134032.	160650.	185969.
4	614.	1428.	3587.	15671.	48157.	76318.	114378.	142334.	168711.	193361.
5	651.	1519.	3825.	16725.	51202.	80856.	120629.	149619.	176781.	202028.
6	678.	1591.	4022.	17633.	53765.	84537.	125395.	154870.	182226.	207466.
7	690.	1633.	4164.	18424.	56226.	88206.	130323.	160433.	188136.	213524.
8	702.	1674.	4295.	19086.	57998.	90526.	132836.	162697.	189854.	214506.
9	713.	1711.	4417.	19763.	60183.	93897.	137614.	168362.	196245.	221478.
10	724.	1749.	4538.	20406.	62096.	96669.	141218.	172354.	200445.	225735.

STATION   : 8176000   GUADALUPE R BELOW CUERO, TEX (DISC)
LOCATION   : LATITUDE N29:03:05, LONGITUDE W097:15:52
DRAINAGE AREA : 4923.00 mi2 (12753 km2)
PERIOD OF RECORD: 01/1903 - 09/1935
GAGE ALTITUDE : 125.45 (38.23 m)
TOTAL PERIOD OF RECORD: 24 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8176000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	35665.13	39394.73	0.16E+10	1.701	0.86
2	63990.91	68049.66	0.46E+10	1.519	0.26
3	84819.77	89301.64	0.80E+10	1.537	0.37
4	101821.09	108942.29	0.12E+11	1.654	0.86
5	114993.23	125654.62	0.16E+11	1.839	1.69
6	123875.88	134914.39	0.18E+11	1.862	1.83
7	132585.70	141982.59	0.20E+11	1.857	1.91
8	139950.50	147102.38	0.22E+11	1.829	1.85
9	146930.42	152018.83	0.23E+11	1.801	1.81
10	153360.13	156606.72	0.25E+11	1.768	1.74

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	2789.	4572.	8102.	22214.	54842.	84417.	129861.	168783.	211250.	257534.
2	5015.	8235.	14620.	40167.	99233.	152720.	234791.	304981.	381454.	464691.
3	6837.	11150.	19653.	53483.	131535.	202337.	311347.	404945.	507333.	619199.
4	8508.	13631.	23626.	63271.	156181.	242477.	378847.	499010.	633594.	783879.
5	10012.	15761.	26858.	70654.	174424.	272622.	431122.	573773.	736668.	921861.
6	11485.	17741.	29656.	76160.	186402.	291734.	463973.	621169.	803049.	1012435.
7	12886.	19736.	32678.	82596.	199524.	310500.	491218.	655711.	845721.	1064208.
8	14330.	21735.	35600.	88392.	210479.	325560.	512208.	681687.	877188.	1101800.
9	15662.	23549.	38215.	93567.	220736.	340420.	534603.	711195.	915269.	1150243.
10	16936.	25245.	40601.	98171.	229968.	354149.	556170.	740567.	954411.	1201581.

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STATION               : 08176500      GUADALUPE RIVER AT VICTORIA, TX
LOCATION              : LATITUDE N28:47:34, LONGITUDE W097:00:46
DRAINAGE AREA         :   5198.00 mi2 (13466  km2)
PERIOD OF RECORD: 12/1934  - 09/1990
GAGE ALTITUDE   : 29.15 (8.884  m)
TOTAL PERIOD OF RECORD:   27 YRS.
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SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8176500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	51816.35	51498.04	0.27E+10	2.568	6.39
2	95839.79	97831.75	0.96E+10	2.838	7.76
3	128887.65	127134.80	0.16E+11	2.757	7.43
4	154522.03	145183.16	0.21E+11	2.594	6.72
5	175961.42	159939.17	0.26E+11	2.422	5.96
6	193288.73	173417.17	0.30E+11	2.310	5.46
7	206611.36	184107.17	0.34E+11	2.202	4.94
8	216830.86	191625.44	0.37E+11	2.117	4.52
9	226579.48	199005.20	0.40E+11	2.044	4.15
10	235392.06	204665.55	0.42E+11	1.935	3.62

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5525.	8912.	15246.	37841.	80923.	113855.	157489.	190234.	222517.	254086.
2	9973.	16277.	28137.	70442.	149939.	209532.	286860.	343772.	398975.	452083.
3	12621.	21465.	38435.	98686.	205109.	278556.	366134.	425529.	479207.	527635.
4	15555.	26671.	47942.	122089.	247224.	329291.	422773.	483349.	535919.	581934.
5	17509.	30396.	55192.	141289.	283255.	373473.	473205.	535874.	588820.	634122.
6	18902.	33024.	60329.	155485.	312217.	411318.	520255.	588297.	645502.	694192.
7	19988.	34976.	64026.	165722.	334269.	441408.	559661.	633793.	696289.	749625.
8	20920.	36675.	67242.	174237.	351127.	463160.	586386.	663366.	728086.	783160.
9	21841.	38310.	70275.	182178.	367115.	484162.	612812.	693121.	760599.	817985.
10	23137.	40207.	73149.	188443.	381011.	504899.	643232.	730967.	805608.	869920.

STATION : 8176900   COLETO CREEK AT ARNOLD ROAD NEAR SCHROEDER, TX
LOCATION   : LATITUDE N28:51:41, LONGITUDE WO97:13:34
DRAINAGE AREA : 357.00 mi2 (924.8 km2)
PERIOD OF RECORD: 07/1978 - 09/1990
GAGE ALTITUDE : 0.00 (0.000 m)
TOTAL PERIOD OF RECORD: 10 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8176900

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	8075.31	6129.13	0.38E+08	0.452	-1.49
2	11081.65	8416.48	0.71E+08	0.410	-1.58
3	11888.53	8934.71	0.80E+08	0.458	-1.47
4	12772.17	9688.12	0.94E+08	0.399	-1.64
5	13107.17	9977.15	0.10E+09	0.428	-1.63
6	13450.91	10392.02	0.11E+09	0.509	-1.54
7	13649.85	10481.69	0.11E+09	0.516	-1.52
8	13919.40	10748.94	0.12E+09	0.531	-1.54
9	14342.28	11299.66	0.13E+09	0.595	-1.51
10	14910.94	12210.47	0.15E+09	0.754	-1.32

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	575.	1104.	2221.	6536.	14145.	19006.	24279.	27494.	30135.	32318.
2	796.	1517.	3035.	8909.	19392.	26202.	33709.	38362.	42234.	45481.
3	905.	1710.	3386.	9723.	20679.	27605.	35074.	39612.	43332.	46402.
4	964.	1813.	3577.	10306.	22202.	29922.	38450.	43756.	48188.	51921.
5	1015.	1893.	3705.	10569.	22698.	30605.	39391.	44894.	49516.	53433.
6	1055.	1950.	3787.	10755.	23216.	31483.	40827.	46779.	51846.	56201.
7	1095.	2018.	3903.	10989.	23512.	31740.	40971.	46813.	51761.	55994.
8	1127.	2064.	3974.	11153.	23933.	32419.	42036.	48184.	53432.	57959.
9	1161.	2110.	4038.	11327.	24585.	33628.	44132.	51016.	57018.	62293.
10	1190.	2144.	4079.	11486.	25439.	35354.	47317.	55461.	62812.	69440.

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STATION   : 08177000   COLETO CREEK NEAR SCHROEDER,TEX(DISC)
LOCATION   : LATITUDE N28:49:53, LONGITUDE WO97:11:10
DRAINAGE AREA   : 369.00 mi2 (955.9 km2)
PERIOD OF RECORD: 01/1930 - 10/1979
GAGE ALTITUDE   : 87.59 (26.69 m)
TOTAL PERIOD OF RECORD: 31 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8177000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	16219.68	26900.36	0.72E+09	4.220	15.86
2	25670.28	48619.25	0.24E+10	4.536	17.74
3	27948.13	50849.00	0.26E+10	4.398	16.87
4	29071.62	52003.86	0.27E+10	4.363	16.63
5	29611.08	52305.26	0.27E+10	4.351	16.57
6	30047.17	52410.86	0.27E+10	4.338	16.49
7	30598.31	52499.52	0.28E+10	4.311	16.33
8	31383.80	52614.63	0.28E+10	4.259	16.06
9	32038.08	52707.80	0.28E+10	4.221	15.86
10	32369.03	52810.10	0.28E+10	4.198	15.73

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	834.	1395.	2565.	7866.	22846.	38998.	67916.	96318.	131041.	173046.
2	1149.	1920.	3548.	11187.	34181.	60482.	110146.	161395.	226663.	308819.
3	1324.	2196.	4020.	12481.	37618.	66144.	119711.	174765.	244679.	332473.
4	1391.	2328.	4294.	13349.	39690.	68866.	122371.	176103.	243009.	325400.
5	1435.	2415.	4472.	13889.	40839.	70157.	122997.	175177.	239234.	317012.
6	1474.	2492.	4631.	14369.	41828.	71220.	123371.	174101.	235585.	309316.
7	1522.	2589.	4832.	14976.	43041.	72484.	123699.	172606.	230932.	299842.
8	1538.	2640.	4970.	15546.	44673.	74970.	127144.	176465.	234742.	302997.
9	1555.	2688.	5095.	16041.	46052.	77028.	129901.	179442.	237509.	305006.
10	1580.	2732.	5177.	16283.	46657.	77936.	131215.	181041.	239347.	307021.

STATION   : 08177500   COLETO CREEK NR VICTORIA, TX
LOCATION   : LATITUDE N28:43:51, LONGITUDE WO97:08:18
DRAINAGE AREA   : 514.00 mi2 (1331. km2)
PERIOD OF RECORD: 07/1939 - 09/1990
GAGE ALTITUDE   : 44.18 (13.46 m)
TOTAL PERIOD OF RECORD: 19 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8177500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15403.95	19271.78	0.37E+09	2.460	4.27
2	21608.14	25835.93	0.67E+09	2.163	3.18
3	23121.74	26431.12	0.70E+09	2.037	2.80
4	24182.90	26928.01	0.73E+09	1.922	2.42
5	24764.16	27251.56	0.74E+09	1.876	2.24
6	25274.12	27361.80	0.75E+09	1.857	2.19
7	25719.05	27694.93	0.77E+09	1.867	2.24
8	26261.90	28247.52	0.80E+09	1.875	2.27
9	26981.46	28908.46	0.84E+09	1.826	2.11
10	27728.56	29321.68	0.86E+09	1.778	1.94

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1061.	1692.	2952.	8337.	22790.	38028.	65034.	91484.	123845.	163114.
2	1389.	2271.	4061.	11814.	32577.	54146.	91677.	127690.	170949.	222449.
3	1530.	2531.	4565.	13234.	35505.	57650.	94581.	128633.	168153.	213714.
4	1639.	2719.	4908.	14147.	37392.	60041.	97099.	130670.	169046.	212680.
5	1734.	2864.	5144.	14673.	38336.	61162.	98204.	131527.	169409.	212265.
6	1876.	3080.	5487.	15355.	39192.	61674.	97473.	129148.	164670.	204367.
7	1929.	3174.	5660.	15795.	39986.	62530.	98022.	129093.	163619.	201880.
8	2061.	3337.	5856.	16056.	40553.	63703.	100765.	133773.	171044.	212965.
9	2131.	3429.	5986.	16361.	41555.	65674.	104807.	140108.	180421.	226239.
10	2179.	3530.	6200.	17011.	42974.	67501.	106747.	141682.	181108.	225432.

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STATION : 8179000   MEDINA RIVER NR PIPE CREEK, TX
LOCATION : LATITUDE N29:40:31, LONGITUDE WO98:58:33
DRAINAGE AREA : 474.00 mi2 (1227. km2)
PERIOD OF RECORD: 12/1922 - 10/1982
GAGE ALTITUDE : 1067.37 (325.3 m)
TOTAL PERIOD OF RECORD: 44 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8179000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	11077.37	15404.53	0.24E+09	2.897	8.66
2	15990.88	22557.19	0.51E+09	2.642	6.33
3	18227.92	25426.76	0.65E+09	2.521	5.26
4	19915.47	27161.87	0.74E+09	2.476	4.95
5	21210.05	28277.55	0.80E+09	2.431	4.72
6	22374.86	29106.50	0.85E+09	2.369	4.45
7	23446.77	29734.65	0.88E+09	2.296	4.14
8	24610.06	30400.48	0.92E+09	2.205	3.76
9	25566.67	30839.15	0.95E+09	2.150	3.54
10	26344.50	31226.19	0.98E+09	2.107	3.38

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	446.	819.	1648.	5598.	16514.	27525.	45652.	61977.	80411.	101040.
2	746.	1295.	2468.	7881.	23052.	39001.	66661.	92944.	124107.	160716.
3	939.	1585.	2935.	9043.	26090.	44188.	76077.	106909.	144094.	188486.
4	1096.	1831.	3353.	10125.	28703.	48214.	82336.	115142.	154549.	201431.
5	1232.	2042.	3704.	11008.	30763.	51330.	87076.	121283.	162238.	210823.
6	1359.	2237.	4026.	11804.	32635.	54203.	91567.	127246.	169911.	220472.
7	1467.	2408.	4319.	12570.	34446.	56917.	95589.	132305.	176008.	227583.
8	1562.	2568.	4609.	13385.	36452.	59947.	100059.	137865.	182584.	235054.
9	1653.	2724.	4897.	14177.	38214.	62342.	102968.	140770.	184994.	236359.
10	1735.	2860.	5137.	14808.	39597.	64241.	105373.	143340.	187459.	238387.

STATION : 8186000   CIBOLO CREEK NR FALLS CITY, TX
LOCATION : LATITUDE N29:00:50, LONGITUDE W097:55:48
DRAINAGE AREA : 827.00 mi2 (2142. km2)
PERIOD OF RECORD: 10/1930 - 09/1990
GAGE ALTITUDE : 264.28 (80.55 m)
TOTAL PERIOD OF RECORD: 60 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8186000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12883.51	12003.87	0.14E+09	1.544	1.54
2	19279.18	18258.32	0.33E+09	1.454	1.17
3	22759.83	21258.45	0.45E+09	1.263	0.44
4	24766.50	23056.79	0.53E+09	1.193	0.19
5	26465.02	24870.72	0.62E+09	1.210	0.26
6	27862.91	26788.00	0.72E+09	1.328	0.77
7	29133.75	28143.67	0.79E+09	1.349	0.91
8	29812.58	28690.16	0.82E+09	1.333	0.87
9	30381.77	29162.19	0.85E+09	1.327	0.86
10	31121.88	30188.34	0.91E+09	1.361	0.94

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1049.	1833.	3395.	9325.	20775.	29262.	39949.	47553.	54694.	61331.
2	1365.	2442.	4651.	13437.	31367.	45197.	63138.	76222.	88742.	100574.
3	1577.	2808.	5336.	15533.	37046.	54217.	77245.	94555.	111540.	127998.
4	1704.	3016.	5709.	16658.	40257.	59534.	85980.	106278.	126539.	146506.
5	1805.	3176.	5988.	17504.	42873.	64083.	93854.	117181.	140864.	164596.
6	1884.	3293.	6181.	18089.	44874.	67779.	100651.	126938.	154069.	181721.
7	2006.	3468.	6452.	18733.	46671.	70959.	106436.	135303.	165514.	196823.
8	2089.	3591.	6643.	19159.	47670.	72566.	109137.	139066.	170535.	203338.
9	2154.	3689.	6802.	19535.	48537.	73904.	111255.	141901.	174191.	207942.
10	2212.	3770.	6925.	19843.	49516.	75744.	114776.	147128.	181490.	217744.

STATION   : 8189500   MISSION RIVER AT REFUGIO, TX
LOCATION   : LATITUDE N28:17:30, LONGITUDE W097:16:44
DRAINAGE AREA   :   690.00 mi2 (1787. km2)
PERIOD OF RECORD: 07/1939 - 09/1990
GAGE ALTITUDE   :   1.00 (0.304 m)
TOTAL PERIOD OF RECORD: 49 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8189500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	17494.17	26070.36	0.68E+09	3.300	9.98
2	28488.39	41591.52	0.17E+10	3.364	10.53
3	34969.33	52497.16	0.28E+10	3.646	12.95
4	38371.87	58437.87	0.34E+10	3.794	14.19
5	40373.20	60093.28	0.36E+10	3.767	14.13
6	41840.31	60673.66	0.37E+10	3.717	13.93
7	43060.53	61022.22	0.37E+10	3.672	13.72
8	43973.60	61299.76	0.38E+10	3.623	13.45
9	44924.19	61851.98	0.38E+10	3.564	13.01
10	45693.05	62253.42	0.39E+10	3.528	12.71

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1034.	1724.	3136.	9224.	25041.	40869.	67370.	91870.	120351.	153230.
2	1641.	2787.	5160.	15417.	41611.	67173.	108799.	146245.	188708.	236613.
3	1851.	3212.	6078.	18719.	51320.	83069.	134392.	180134.	231499.	288902.
4	2025.	3506.	6623.	20394.	56143.	91211.	148316.	199568.	257476.	322562.
5	2126.	3704.	7037.	21771.	59738.	96602.	155969.	208674.	267646.	333317.
6	2229.	3892.	7404.	22887.	62459.	100558.	161416.	215040.	274687.	340680.
7	2286.	4026.	7708.	23938.	64953.	103879.	165139.	218359.	276895.	340835.
8	2313.	4100.	7894.	24657.	66809.	106500.	168425.	221766.	280037.	343181.
9	2344.	4181.	8095.	25405.	68661.	109025.	171388.	224599.	282289.	344252.
10	2380.	4274.	8315.	26170.	70273.	110848.	172632.	224621.	280369.	339490.

STATION   : 8190000   NUECES RIVER AT LAGUNA, TX
LOCATION   : LATITUDE N29:25:42, LONGITUDE W099:59:49
DRAINAGE AREA   :   737.00 mi2 (1909. km2)
PERIOD OF RECORD: 10/1923 - 09/1990
GAGE ALTITUDE : 1119.72 (341.2 m)
TOTAL PERIOD OF RECORD: 67 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8190000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	17268.16	33426.38	0.11E+10	4.044	17.32
2	22197.95	38247.43	0.15E+10	3.614	14.30
3	25209.15	41535.53	0.17E+10	3.572	14.42
4	27027.61	42835.61	0.18E+10	3.482	13.86
5	28385.81	43791.34	0.19E+10	3.418	13.42
6	29543.60	44523.53	0.20E+10	3.366	13.09
7	30571.54	45123.37	0.20E+10	3.322	12.82
8	31544.54	45672.25	0.21E+10	3.277	12.55
9	32437.72	46109.79	0.21E+10	3.242	12.35
10	33207.98	46470.04	0.22E+10	3.218	12.22

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	339.	631.	1331.	5404.	21278.	42996.	90219.	144881.	220930.	324685.
2	633.	1120.	2223.	8099.	28843.	55493.	110763.	172451.	255987.	367283.
3	881.	1505.	2872.	9814.	33235.	62631.	122748.	189299.	279007.	398195.
4	1098.	1835.	3415.	11149.	36183.	66776.	128103.	194953.	284033.	401197.
5	1300.	2131.	3878.	12193.	38307.	69655.	131719.	198772.	287569.	403765.
6	1489.	2402.	4293.	13090.	40084.	72075.	134896.	202374.	291455.	407673.
7	1669.	2658.	4680.	13909.	41673.	74204.	137616.	205355.	294502.	410450.
8	1844.	2906.	5056.	14703.	43200.	76209.	140030.	207774.	296545.	411543.
9	2013.	3146.	5420.	15476.	44659.	78058.	142037.	209443.	297277.	410475.
10	2177.	3377.	5764.	16177.	45910.	79569.	143516.	210439.	297214.	408541.

STATION : 8190500   WEST NUECES RIVER NR BRACKETTVILLE, TX
LOCATION : LATITUDE N29:28:21, LONGITUDE W100:14:10
DRAINAGE AREA : 694.00 mi2 (1797. km2)
PERIOD OF RECORD: 10/1939 - 09/1990
GAGE ALTITUDE : 1326.79 (404.4 m)
TOTAL PERIOD OF RECORD: 40 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8190500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12132.66	18242.17	0.33E+09	2.350	4.97
2	15375.89	22506.23	0.51E+09	2.220	4.16
3	17398.57	24820.39	0.62E+09	2.028	3.33
4	18052.84	25493.27	0.65E+09	1.975	3.09
5	18873.39	26551.08	0.70E+09	1.883	2.57
6	19313.88	27088.45	0.73E+09	1.860	2.46
7	19784.36	27588.93	0.76E+09	1.813	2.24
8	20497.61	29325.91	0.86E+09	1.965	2.93
9	20870.42	30131.67	0.91E+09	2.026	3.24
10	21060.41	30405.45	0.92E+09	2.028	3.25

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5.	24.	139.	2424.	22109.	55606.	126515.	198625.	283478.	378054.
2	9.	40.	222.	3425.	28054.	67008.	144884.	220570.	306614.	399866.
3	13.	57.	286.	3954.	30827.	73284.	159605.	245554.	345853.	456964.
4	17.	69.	334.	4302.	31818.	74072.	158454.	241503.	337744.	443768.
5	19.	79.	369.	4571.	32939.	75978.	161392.	245197.	342215.	449015.
6	23.	89.	404.	4755.	33370.	76550.	162457.	247256.	346158.	455714.
7	24.	94.	422.	4932.	34203.	77903.	164024.	248334.	346003.	453593.
8	25.	97.	437.	5073.	35011.	79571.	167200.	252855.	351974.	461067.
9	26.	101.	451.	5192.	35502.	80276.	167764.	252815.	350808.	458277.
10	27.	104.	463.	5292.	35826.	80538.	167234.	250959.	346904.	451660.

STATION : 8192000   NUECES RIVER BELOW UVALDE, TX
LOCATION   : LATITUDE N29:07:25, LONGITUDE W099:53:40
DRAINAGE AREA   : 1861.00 mi2 (4821. km2)
PERIOD OF RECORD: 10/1939 - 09/1990
GAGE ALTITUDE   : 796.12 (242.6 m)
TOTAL PERIOD OF RECORD: 51 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8192000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	17220.77	23367.70	0.55E+09	1.855	2.40
2	26608.66	39201.58	0.15E+10	2.179	3.66
3	31477.07	45077.64	0.20E+10	1.918	2.36
4	34229.03	47990.38	0.23E+10	1.816	1.90
5	35973.79	50163.79	0.25E+10	1.781	1.71
6	37598.69	52265.39	0.27E+10	1.774	1.66
7	38806.15	53476.00	0.29E+10	1.745	1.57
8	39856.66	54665.01	0.30E+10	1.723	1.48
9	41161.78	56416.27	0.32E+10	1.712	1.40
10	42016.01	57293.02	0.33E+10	1.701	1.36

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	88.	248.	791.	5559.	28056.	57772.	114310.	169745.	235354.	310005.
2	150.	400.	1213.	8102.	40871.	85611.	174626.	265889.	378157.	511341.
3	202.	519.	1518.	9665.	47799.	100089.	205529.	315390.	452509.	618214.
4	249.	624.	1778.	10863.	52139.	107930.	219582.	335439.	479731.	654065.
5	293.	715.	1984.	11650.	54525.	111993.	226812.	346113.	495021.	675734.
6	337.	803.	2176.	12346.	56691.	115898.	234437.	358135.	513214.	702652.
7	378.	885.	2349.	12943.	58393.	118790.	239745.	366260.	525297.	720432.
8	419.	962.	2508.	13452.	59759.	121084.	244032.	372995.	535600.	736030.
9	461.	1041.	2673.	14014.	61439.	124057.	249711.	381831.	548841.	755502.
10	503.	1122.	2839.	14543.	62693.	125765.	251794.	383993.	550882.	757336.

STATION   : 8193000   NUECES RIVER NR ASHERTON, TX
LOCATION   : LATITUDE N28:30:00, LONGITUDE W099:40:54
DRAINAGE AREA   :   4082.00 mi2 (10575 km2)
PERIOD OF RECORD: 10/1939 - 09/1990
GAGE ALTITUDE   :   470.92 (143.5 m)
TOTAL PERIOD OF RECORD: 50 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8193000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	13814.72	11510.03	0.13E+09	1.447	1.33
2	25692.49	21424.90	0.46E+09	1.477	1.50
3	35231.17	29707.56	0.88E+09	1.435	1.27
4	42991.57	36041.67	0.13E+10	1.343	0.91
5	49071.43	41752.53	0.17E+10	1.330	0.85
6	54178.20	47344.64	0.22E+10	1.367	0.93
7	58062.84	51752.21	0.27E+10	1.397	1.03
8	61117.29	55391.94	0.31E+10	1.419	1.12
9	63336.11	57654.60	0.33E+10	1.410	1.13
10	65087.52	59031.09	0.35E+10	1.375	1.02

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1003.	2014.	4162.	11875.	22949.	28507.	33336.	35691.	37301.	38398.
2	1818.	3679.	7661.	22074.	42835.	53240.	62250.	66624.	69605.	71625.
3	2400.	4858.	10156.	29715.	58995.	74275.	87972.	94877.	99699.	103073.
4	2892.	5842.	12213.	35954.	72223.	91571.	109245.	118338.	124767.	129339.
5	3216.	6475.	13534.	40252.	82559.	106036.	128256.	140107.	148735.	155068.
6	3451.	6912.	14419.	43331.	91087.	118877.	146370.	161671.	173271.	182123.
7	3639.	7239.	15040.	45464.	97504.	129009.	161331.	179939.	194486.	205907.
8	3827.	7516.	15470.	46794.	102350.	137520.	175148.	197715.	215985.	230838.
9	4002.	7776.	15865.	47852.	105822.	143620.	185228.	210924.	232229.	250007.
10	4153.	8017.	16264.	48909.	108676.	148222.	192374.	220039.	243242.	262847.

STATION : 8194000   NUECES RIVER AT COTULLA, TX
LOCATION   : LATITUDE N28:25:34, LONGITUDE WO99:14:23
DRAINAGE AREA   : 5171.00 mi2 (13396 km2)
PERIOD OF RECORD: 10/1926 - 09/1990
GAGE ALTITUDE : 368.08 (112.1 m)
TOTAL PERIOD OF RECORD: 64 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8194000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19347.30	24429.68	0.60E+09	3.524	14.10
2	35383.14	43064.13	0.19E+10	3.341	12.67
3	47486.13	55383.45	0.31E+10	3.138	11.17
4	57130.16	65456.98	0.43E+10	3.113	11.18
5	64732.96	72555.57	0.53E+10	3.037	10.79
6	70988.40	77790.57	0.61E+10	2.900	9.87
7	76352.05	82596.97	0.68E+10	2.737	8.62
8	80888.09	86992.87	0.76E+10	2.598	7.53
9	84807.43	90822.13	0.82E+10	2.491	6.76
10	88005.91	93724.09	0.88E+10	2.400	6.17

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
1	1451.	2486.	4547.	12631.	29644.	43468.	62511.	77223.	92015.	106718.
2	2446.	4385.	8357.	24032.	55472.	79293.	109676.	131490.	152092.	171324.
3	3148.	5836.	11433.	33494.	75700.	105628.	141417.	165484.	186915.	206051.
4	3632.	6913.	13851.	41231.	91963.	126235.	165305.	190316.	211654.	230013.
5	3971.	7716.	15742.	47496.	105087.	142668.	184064.	209648.	230870.	248589.
6	4223.	8334.	17244.	52649.	116090.	156562.	200104.	226346.	247670.	265072.
7	4407.	8780.	18336.	56622.	125396.	169111.	215880.	243877.	266492.	284817.
8	4571.	9141.	19175.	59675.	133062.	180021.	230508.	260864.	285466.	305470.
9	4692.	9422.	19856.	62273.	139727.	189554.	243322.	275752.	302093.	323560.
10	4789.	9657.	20439.	64492.	145242.	197256.	253388.	287229.	314701.	337069.

STATION : 8194200 SAN CASIMIRO CREEK NR FREER, TX
LOCATION : LATITUDE N27:57:53, LONGITUDE W098:58:00
DRAINAGE AREA : 469.00 mi2 (1215. km2)
PERIOD OF RECORD: 01/1962 - 09/1990
GAGE ALTITUDE : 298.00 (90.83 m)
TOTAL PERIOD OF RECORD: 29 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8194200

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	10420.61	16585.13	0.28E+09	2.773	5.70
2	16668.14	25677.14	0.66E+09	2.720	5.23
3	20013.57	29664.01	0.88E+09	2.686	5.11
4	21771.33	31990.49	0.10E+10	2.717	5.23
5	22927.90	33050.68	0.11E+10	2.709	5.20
6	23608.75	33314.10	0.11E+10	2.703	5.18
7	24118.29	33451.25	0.11E+10	2.698	5.18
8	24503.22	33555.78	0.11E+10	2.691	5.18
9	24774.89	33666.45	0.11E+10	2.680	5.15
10	24955.62	33711.99	0.11E+10	2.670	5.11

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	797.	1093.	1662.	4184.	12465.	23640.	49528.	82313.	132841.	209481.
2	1196.	1713.	2715.	7133.	20983.	38720.	77066.	122770.	189223.	284584.
3	1443.	2112.	3411.	9073.	26136.	47024.	90195.	139278.	207984.	302697.
4	1596.	2356.	3832.	10198.	28872.	51093.	95774.	145154.	212737.	303730.
5	1697.	2534.	4160.	11112.	30978.	53929.	98748.	146918.	211230.	295818.
6	1787.	2692.	4449.	11870.	32463.	55517.	99159.	144785.	204133.	280424.
7	1845.	2798.	4649.	12412.	33582.	56821.	99962.	144281.	200973.	272799.
8	1867.	2851.	4768.	12792.	34452.	57915.	100874.	144452.	199508.	268519.
9	1871.	2873.	4827.	13014.	35028.	58727.	101822.	145256.	199787.	267755.
10	1875.	2888.	4869.	13169.	35417.	59256.	102403.	145679.	199784.	266940.

STATION : 8194500   NUECES RIVER NR TILDEN, TX
LOCATION : LATITUDE N28:18:31, LONGITUDE WO98:33:25
DRAINAGE AREA : 8093.00 mi2 (20966 km2)
PERIOD OF RECORD: 12/1942 - 09/1990
GAGE ALTITUDE : 183.50 (55.93 m)
TOTAL PERIOD OF RECORD: 48 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8194500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	25768.52	30404.53	0.92E+09	2.167	4.06
2	46898.64	52639.15	0.28E+10	2.033	3.68
3	63345.95	67904.62	0.46E+10	1.839	2.84
4	76209.84	80383.95	0.65E+10	1.843	2.97
5	87095.62	90623.18	0.82E+10	1.857	3.16
6	96257.98	98778.60	0.98E+10	1.838	3.16
7	103999.85	104857.57	0.11E+11	1.784	2.94
8	110485.59	109266.29	0.12E+11	1.725	2.72
9	116153.22	113016.36	0.13E+11	1.675	2.54
10	121075.05	115552.60	0.13E+11	1.603	2.26

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	1479.	2536.	4744.	14421.	39462.	64078.	104340.	140663.	181919.	228522.
2	2728.	4751.	8990.	27399.	73305.	116582.	184463.	243323.	307996.	378635.
3	3822.	6697.	12695.	38385.	100263.	156596.	242092.	314012.	391192.	473312.
4	4797.	8391.	15835.	47254.	121044.	186729.	284464.	365232.	450734.	540374.
5	5644.	9868.	18577.	54961.	138809.	212152.	319579.	407099.	498735.	593645.
6	6267.	11014.	20802.	61565.	154244.	234075.	349227.	441682.	537381.	635176.
7	6765.	11979.	22758.	67518.	167752.	252557.	372674.	467490.	564289.	661775.
8	7260.	12911.	24599.	72845.	179150.	267566.	390721.	486480.	583042.	679124.
9	7734.	13783.	26284.	77572.	189020.	280428.	406062.	502585.	598970.	693965.
10	8149.	14572.	27848.	81999.	197906.	291470.	418083.	513992.	608656.	700890.

STATION : 08194600 NUECES RIVER AT SIMMONS, TEX.(DISC)
LOCATION : LATITUDE N28:25:16, LONGITUDE WO98:17:03
DRAINAGE AREA : 8561.00 mi2 (22178 km2)
PERIOD OF RECORD: 04/1965 - 10/1977
GAGE ALTITUDE : 119.63 (36.46 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8194600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	30037.23	36657.61	0.13E+10	2.026	1.57
2	56457.98	68674.75	0.47E+10	1.935	1.26
3	78250.38	93545.20	0.88E+10	1.851	1.00
4	97815.80	117583.81	0.14E+11	1.869	1.05
5	113928.91	137459.25	0.19E+11	1.938	1.26
6	127079.32	151929.53	0.23E+11	1.925	1.21
7	137490.27	162054.14	0.26E+11	1.914	1.19
8	146987.28	171266.66	0.29E+11	1.910	1.18
9	154472.59	177038.84	0.31E+11	1.889	1.13
10	160273.94	179721.38	0.32E+11	1.840	1.00

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2363.	3610.	6040.	16252.	43983.	74188.	129768.	186396.	258223.	348566.
2	4422.	6713.	11177.	30052.	82192.	140088.	248685.	361248.	506389.	691566.
3	6211.	9437.	15716.	42146.	114537.	194244.	342564.	495224.	690794.	938903.
4	7520.	11502.	19296.	52345.	143438.	243974.	431170.	623859.	870492.	1183196.
5	8743.	13442.	22653.	61599.	167843.	283648.	496555.	713206.	987437.	1331801.
6	9416.	14778.	25372.	70135.	189836.	316661.	543116.	766912.	1043025.	1381074.
7	10084.	16071.	27951.	77863.	208071.	341863.	573647.	795934.	1063258.	1382286.
8	11077.	17659.	30674.	84793.	223440.	363500.	602494.	828475.	1097098.	1414068.
9	12447.	19574.	33500.	90490.	234476.	379096.	625305.	858048.	1134892.	1461989.
10	13623.	21252.	36030.	95645.	243772.	390874.	639218.	872411.	1148406.	1473051.

STATION : 8195000   FRIO RIVER AT CONCAN, TX
LOCATION   : LATITUDE N29:29:18, LONGITUDE W099:42:16
DRAINAGE AREA   :   389.00 mi2 (1007. km2)
PERIOD OF RECORD: 11/1923 - 09/1990
GAGE ALTITUDE : 1203.71 (366.8 m)
TOTAL PERIOD OF RECORD: 66 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8195000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9244.48	16275.57	0.26E+09	3.963	16.90
2	11965.75	20758.40	0.43E+09	4.164	18.43
3	13340.01	22377.52	0.50E+09	4.025	17.19
4	14393.66	23306.01	0.54E+09	3.900	16.20
5	15164.42	23938.75	0.57E+09	3.833	15.68
6	15958.17	24533.38	0.60E+09	3.740	15.01
7	16690.01	25123.28	0.63E+09	3.648	14.33
8	17392.16	25604.91	0.66E+09	3.563	13.75
9	18001.65	26037.19	0.68E+09	3.491	13.24
10	18541.70	26414.16	0.70E+09	3.434	12.84

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	198.	381.	822.	3344.	12471.	23954.	46886.	71346.	103057.	143418.
2	329.	616.	1283.	4830.	16532.	30276.	56192.	82533.	115388.	155766.
3	444.	799.	1598.	5646.	18491.	33322.	61110.	89306.	124536.	167934.
4	544.	960.	1875.	6365.	20140.	35731.	64553.	93512.	129455.	173481.
5	641.	1110.	2122.	6949.	21341.	37360.	66652.	95857.	131924.	175914.
6	732.	1250.	2353.	7511.	22580.	39158.	69245.	99085.	135813.	180490.
7	817.	1380.	2564.	8015.	23688.	40784.	71645.	102151.	139623.	185141.
8	899.	1504.	2767.	8503.	24782.	42412.	74096.	105325.	143618.	190075.
9	980.	1624.	2955.	8925.	25692.	43766.	76184.	108122.	147294.	194853.
10	1062.	1743.	3139.	9322.	26493.	44903.	77834.	110237.	149963.	198199.

STATION : 8197500   FRIO RIVER BELOW DRY FRIO RIVER NR UVALDE, TX
LOCATION : LATITUDE N29:14:44, LONGITUDE W099:40:27
DRAINAGE AREA : 631.00 mi2 (1634. km2)
PERIOD OF RECORD: 10/1953 - 09/1990
GAGE ALTITUDE : 882.47 (268.9 m)
TOTAL PERIOD OF RECORD: 30 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8197500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	11694.28	12501.19	0.16E+09	1.672	1.39
2	14918.28	14411.75	0.21E+09	1.289	0.22
3	16222.09	15537.24	0.24E+09	1.187	-0.12
4	17128.56	16552.61	0.27E+09	1.145	-0.31
5	17632.97	17092.86	0.29E+09	1.137	-0.33
6	18245.32	18019.58	0.32E+09	1.230	0.00
7	18921.11	18999.05	0.36E+09	1.383	0.60
8	19394.87	19628.61	0.39E+09	1.420	0.79
9	19995.13	20340.65	0.41E+09	1.396	0.74
10	20287.81	20768.84	0.43E+09	1.426	0.88

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	634.	1194.	2403.	7591.	18979.	28137.	40305.	49326.	58045.	66345.
2	970.	1761.	3409.	10150.	24359.	35576.	50380.	61331.	71922.	82030.
3	1019.	1871.	3665.	11058.	26620.	38808.	54721.	66362.	77510.	88040.
4	1027.	1899.	3752.	11504.	28129.	41329.	58748.	71605.	84002.	95786.
5	1049.	1935.	3816.	11725.	28918.	42770.	61317.	75193.	88724.	101731.
6	1071.	1968.	3872.	11938.	29799.	44475.	64508.	79761.	94854.	109575.
7	1091.	2020.	4002.	12414.	30930.	45998.	66338.	81661.	96683.	111200.
8	1092.	2028.	4035.	12622.	31707.	47351.	68588.	84663.	100480.	115817.
9	1089.	2030.	4059.	12837.	32679.	49173.	71838.	89175.	106375.	123186.
10	1089.	2034.	4075.	12949.	33142.	50015.	73303.	91181.	108972.	126408.

STATION : 8205500   FRIO RIVER NR DERBY, TX
LOCATION   : LATITUDE N28:44:11, LONGITUDE WO99:08:40
DRAINAGE AREA : 3429.00 mi2 (8883. km2)
PERIOD OF RECORD: 08/1915 - 09/1990
GAGE ALTITUDE : 449.11 (136.8 m)
TOTAL PERIOD OF RECORD: 75 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8205500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	18088.52	36158.67	0.13E+10	5.203	29.11
2	28160.53	55572.94	0.31E+10	5.376	30.97
3	34422.58	67010.29	0.45E+10	5.106	27.83
4	37628.92	70728.31	0.50E+10	4.904	25.79
5	40102.39	72841.08	0.53E+10	4.732	24.17
6	42083.29	74554.77	0.56E+10	4.587	22.86
7	44040.52	76603.24	0.59E+10	4.380	20.94
8	45606.88	78364.85	0.61E+10	4.234	19.57
9	46842.31	79685.65	0.63E+10	4.125	18.58
10	47842.84	80693.41	0.65E+10	4.048	17.85

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5

DURATION (DAYS)

1	531.	1031.	2196.	8090.	24942.	41976.	69679.	94210.	121487.	151350.
2	898.	1738.	3671.	13235.	39585.	65380.	106159.	141370.	179768.	220942.
3	1123.	2141.	4469.	15946.	48028.	80101.	131980.	177787.	228647.	284341.
4	1285.	2425.	5010.	17640.	52871.	88214.	145720.	196821.	253867.	316765.
5	1428.	2664.	5450.	18957.	56685.	94789.	157337.	213429.	276517.	346712.
6	1530.	2838.	5773.	19965.	59734.	100143.	166937.	227252.	295471.	371874.
7	1602.	2958.	6002.	20753.	62493.	105367.	177009.	242355.	316858.	401040.
8	1681.	3085.	6228.	21429.	64618.	109277.	184455.	253524.	332731.	422830.
9	1754.	3202.	6431.	21998.	66285.	112261.	190047.	261884.	344653.	439253.
10	1831.	3330.	6657.	22608.	67745.	114469.	193395.	266213.	350072.	445883.

STATION   : 8206600   FRIO RIVER AT TILDEN, TX
LOCATION   : LATITUDE N28:28:02, LONGITUDE WO98:32:50
DRAINAGE AREA   : 4493.00 mi2 (11639 km2)
PERIOD OF RECORD: 07/1978 - 09/1990
GAGE ALTITUDE   : 216.04 (65.84 m)
TOTAL PERIOD OF RECORD: 10 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8206600

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	12635.90	11881.26	0.14E+09	1.452	0.04
2	22608.60	22611.46	0.51E+09	1.834	0.82
3	30119.54	31572.41	0.10E+10	1.929	0.99
4	36246.95	39589.44	0.16E+10	2.045	1.23
5	42527.21	48443.64	0.23E+10	2.122	1.39
6	48911.61	59058.43	0.35E+10	2.233	1.60
7	54068.83	68124.87	0.46E+10	2.327	1.79
8	58467.77	76678.52	0.59E+10	2.423	1.98
9	62050.51	82753.87	0.68E+10	2.471	2.08
10	65008.26	87492.01	0.77E+10	2.503	2.15

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	710.	1377.	2837.	9057.	22008.	31733.	43825.	52220.	59877.	66843.
2	1172.	2331.	4920.	16135.	39402.	56538.	77360.	91449.	103985.	115176.
3	1384.	2816.	6094.	20832.	52551.	76451.	105917.	126075.	144150.	160385.
4	1552.	3182.	6960.	24335.	62975.	92920.	130693.	157088.	181185.	203127.
5	1648.	3394.	7503.	27110.	73537.	111696.	162307.	199379.	234611.	267702.
6	1740.	3557.	7863.	29123.	83276.	131193.	199172.	252185.	305299.	357473.
7	1897.	3825.	8365.	30952.	90431.	145121.	225854.	291174.	358664.	427030.
8	2033.	4044.	8751.	32306.	96128.	156786.	249440.	326794.	408830.	494094.
9	2143.	4249.	9173.	33878.	101435.	166287.	266348.	350648.	440724.	535030.
10	2247.	4446.	9579.	35336.	105966.	174017.	279428.	368560.	464087.	564402.

STATION : 8206700   SAN MIGUEL CREEK NR TILDEN, TX
LOCATION : LATITUDE N28:35:14, LONGITUDE W098:32:44
DRAINAGE AREA : 783.00 mi2 (2028. km2)
PERIOD OF RECORD: 02/1964 - 09/1990
GAGE ALTITUDE : 242.95 (74.05 m)
TOTAL PERIOD OF RECORD: 27 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8206700

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	9378.81	8489.08	0.72E+08	1.212	0.35
2	14257.56	12619.00	0.16E+09	1.212	0.47
3	17285.00	14950.16	0.22E+09	0.989	-0.23
4	19015.90	16555.36	0.27E+09	1.071	0.12
5	20086.16	17247.67	0.30E+09	1.077	0.23
6	20784.28	17580.35	0.31E+09	1.041	0.24
7	21445.83	18060.67	0.33E+09	0.983	0.06
8	22128.56	18728.00	0.35E+09	0.965	-0.06
9	22613.64	19150.00	0.37E+09	0.946	-0.15
10	22985.66	19337.50	0.37E+09	0.918	-0.20

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	600.	1104.	2163.	6529.	15705.	22879.	32226.	39052.	45578.	51731.
2	959.	1750.	3399.	10090.	23896.	34543.	48277.	58220.	67665.	76523.
3	1057.	1984.	3964.	12208.	29393.	42559.	59342.	71320.	82537.	92944.
4	1092.	2087.	4246.	13390.	32579.	47220.	65743.	78837.	90983.	102172.
5	1121.	2181.	4506.	14381.	34722.	49795.	68307.	81001.	92450.	102777.
6	1133.	2230.	4655.	15006.	36175.	51640.	70343.	82958.	94160.	104145.
7	1136.	2254.	4740.	15444.	37464.	53573.	73044.	86155.	97774.	108115.
8	1140.	2274.	4813.	15841.	38726.	55553.	75957.	89728.	101950.	112840.
9	1143.	2291.	4872.	16149.	39652.	56959.	77945.	92100.	104652.	115828.
10	1148.	2313.	4942.	16463.	40425.	57977.	79134.	93310.	105799.	116866.

STATION : 8207000   FRIO RIVER AT CALLIHAM, TEX (DISC)
LOCATION : LATITUDE N28:29:31, LONGITUDE WO98:20:47
DRAINAGE AREA : 5491.00 mi2 (14225 km2)
PERIOD OF RECORD: 10/1924 - 03/1981
GAGE ALTITUDE : 153.47 (46.77 m)
TOTAL PERIOD OF RECORD: 52 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8207000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	19345.52	23152.70	0.54E+09	3.063	9.93
2	34145.83	38806.80	0.15E+10	2.583	6.58
3	45957.99	52841.08	0.28E+10	2.562	6.38
4	54324.16	62868.64	0.40E+10	2.567	6.30
5	60020.90	68432.64	0.47E+10	2.519	6.05
6	64131.76	71605.95	0.51E+10	2.427	5.57
7	67837.02	74067.98	0.55E+10	2.313	5.00
8	71393.49	76651.64	0.59E+10	2.205	4.40
9	74357.50	78802.78	0.62E+10	2.129	3.97
10	76616.61	80379.89	0.65E+10	2.081	3.69

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	2299.	3308.	5139.	11929.	27651.	42882.	68429.	92528.	121293.	155539.
2	3792.	5595.	8909.	21290.	49734.	76762.	121143.	162061.	209932.	265765.
3	4702.	7078.	11510.	28343.	67382.	104424.	164938.	220316.	284633.	359045.
4	5444.	8240.	13473.	33422.	79730.	123583.	195023.	260179.	335620.	422620.
5	5864.	8991.	14879.	37345.	88942.	137002.	213959.	282920.	361548.	450853.
6	6171.	9557.	15964.	40402.	95873.	146752.	226913.	297623.	377120.	466248.
7	6397.	10025.	16933.	43289.	102377.	155648.	238051.	309439.	388406.	475626.
8	6622.	10481.	17865.	46046.	108532.	164018.	248467.	320471.	398981.	484556.
9	6848.	10916.	18727.	48478.	113664.	170694.	256173.	327972.	405219.	488388.
10	7034.	11278.	19434.	50435.	117587.	175556.	261297.	332419.	408172.	488838.

STATION : 8208000   ATASCOSA RIVER AT WHITSETT, TX
LOCATION   : LATITUDE N28:37:18, LONGITUDE WO98:17:02
DRAINAGE AREA : 1171.00 mi2 (3033. km2)
PERIOD OF RECORD: 06/1932 - 09/1990
GAGE ALTITUDE : 159.04 (48.47 m)
TOTAL PERIOD OF RECORD: 59 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8208000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	15409.02	21740.21	0.47E+09	3.239	11.48
2	25768.49	35462.08	0.13E+10	3.057	10.45
3	31766.97	43766.76	0.19E+10	2.943	9.35
4	34745.04	47261.71	0.22E+10	2.920	9.36
5	36933.18	49741.07	0.25E+10	2.893	9.24
6	38326.31	50967.26	0.26E+10	2.822	8.80
7	39592.73	52055.24	0.27E+10	2.733	8.24
8	40656.96	52942.15	0.28E+10	2.650	7.69
9	41680.76	53580.21	0.29E+10	2.588	7.30
10	42404.42	54043.70	0.29E+10	2.534	6.97

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	742.	1319.	2558.	8155.	22788.	37047.	59973.	80257.	102876.	127929.
2	1215.	2156.	4186.	13456.	38226.	62860.	103214.	139524.	180547.	226623.
3	1410.	2531.	4977.	16339.	47200.	78175.	129206.	175299.	227509.	286249.
4	1541.	2780.	5487.	18054.	51940.	85646.	140663.	189924.	245336.	307191.
5	1652.	2984.	5890.	19352.	55408.	91035.	148821.	200262.	257865.	321848.
6	1745.	3148.	6201.	20267.	57635.	94311.	153457.	205846.	264284.	328940.
7	1821.	3276.	6438.	20977.	59604.	97561.	158877.	213286.	274068.	341438.
8	1883.	3383.	6638.	21585.	61268.	100270.	163305.	219273.	281829.	351215.
9	1942.	3497.	6873.	22341.	63108.	102855.	166597.	222781.	285223.	354041.
10	1979.	3568.	7016.	22810.	64354.	104772.	169446.	226336.	289459.	358902.

STATION   : 08210000   NUECES RIVER NR THREE RIVERS, TX
LOCATION   : LATITUDE N28:25:38, LONGITUDE W098:10:40
DRAINAGE AREA   : 15427.00 mi2 (39966 km2)
PERIOD OF RECORD : 07/1915 - 09/1990
GAGE ALTITUDE   : 99.26 (30.25 m)
TOTAL PERIOD OF RECORD: 72 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8210000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	36582.65	39367.92	0.15E+10	3.042	11.48
2	68169.97	73634.02	0.54E+10	3.326	14.38
3	93828.92	101964.23	0.10E+11	3.549	16.40
4	115215.59	125444.80	0.16E+11	3.700	17.84
5	133224.27	144278.30	0.21E+11	3.742	18.34
6	149162.95	160987.02	0.26E+11	3.755	18.49
7	162573.25	172485.52	0.30E+11	3.699	18.07
8	174749.61	180854.33	0.33E+11	3.575	17.07
9	185475.53	187386.02	0.35E+11	3.410	15.75
10	195607.34	194885.27	0.38E+11	3.217	13.92

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	5708.	7797.	11427.	24109.	51845.	78000.	121301.	161816.	210191.	267681.
2	10191.	14179.	21158.	45500.	97814.	145897.	223406.	294188.	376627.	472616.
3	13958.	19537.	29300.	63190.	135139.	200351.	304124.	397692.	505517.	629750.
4	17054.	23997.	36150.	78184.	166522.	245653.	370201.	481289.	608146.	752994.
5	19532.	27641.	41857.	90947.	193371.	284254.	426003.	551270.	693205.	854006.
6	21390.	30582.	46752.	102544.	217790.	318585.	473567.	608532.	759550.	928496.
7	23407.	33636.	51618.	113242.	238535.	346220.	509173.	648867.	803150.	973530.
8	25827.	37045.	56682.	123335.	256874.	370206.	539893.	683978.	841882.	1015014.
9	27695.	39775.	60891.	132172.	273461.	392144.	568190.	716397.	877639.	1053268.
10	29444.	42228.	64545.	139736.	288473.	413262.	598226.	753858.	923121.	1107433.

STATION : 0821240O   LOS OLMOS CREEK NR FALFURRIAS, TX
LOCATION : LATITUDE N27:15:51, LONGITUDE WO98:08:08
DRAINAGE AREA : 480.OO mi2 (1243. km2)
PERIOD OF RECORD: 01/1967 - 09/1983
GAGE ALTITUDE : 116.58 (35.53 m)
TOTAL PERIOD OF RECORD: 16 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8212400

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1709.63	2405.46	0.58E+07	1.634	0.28
2	2957.41	4590.46	0.21E+08	1.882	0.89
3	3738.06	6149.59	0.38E+08	2.067	1.41
4	4223.53	7139.57	0.51E+08	2.123	1.50
5	4509.79	7726.89	0.60E+08	2.161	1.58
6	4685.97	8107.14	0.66E+08	2.207	1.75
7	4759.02	8204.66	0.67E+08	2.218	1.79
8	4779.55	8229.99	0.68E+08	2.220	1.80
9	4789.46	8243.33	0.68E+08	2.220	1.80
10	4794.76	8249.21	0.68E+08	2.221	1.80

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	17.	42.	117.	647.	2670.	5025.	9124.	12887.	17141.	21797.
2	23.	57.	161.	953.	4322.	8620.	16763.	24809.	34449.	45626.
3	29.	70.	194.	1129.	5207.	10591.	21197.	32080.	45530.	61684.
4	32.	77.	210.	1210.	5707.	11879.	24565.	38116.	55422.	76974.
5	35.	83.	222.	1258.	5994.	12647.	26694.	42095.	62209.	87853.
6	38.	88.	230.	1286.	6150.	13100.	28083.	44861.	67204.	96229.
7	41.	92.	238.	1312.	6251.	13346.	28778.	46219.	69657.	100377.
8	43.	96.	244.	1314.	6241.	13385.	29134.	47188.	71780.	104437.
9	45.	98.	247.	1311.	6214.	13395.	29435.	48074.	73795.	108376.
10	47.	102.	251.	1310.	6188.	13382.	29622.	48706.	75323.	111484.

STATION : 8374000   ALAMITO CREEK NR PRESIDIO, TX
LOCATION : LATITUDE N29:31:15, LONGITUDE W104:17:40
DRAINAGE AREA : 1504.00 mi2 (3896. km2)
PERIOD OF RECORD: 01/1932 - 12/1971
GAGE ALTITUDE : 2541.61 (774.6 m)
TOTAL PERIOD OF RECORD: 41 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8374000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	3117.97	2313.90	0.54E+07	1.934	4.06
2	4242.64	3350.00	0.11E+08	2.032	4.48
3	4800.35	3790.82	0.14E+08	1.629	2.05
4	5160.11	4046.67	0.16E+08	1.519	1.47
5	5492.21	4317.37	0.19E+08	1.426	1.04
6	5846.78	4684.97	0.22E+08	1.280	0.37
7	5987.75	4762.46	0.23E+08	1.248	0.21
8	6138.50	4841.18	0.23E+08	1.231	0.12
9	6305.04	4884.28	0.24E+08	1.240	0.11
10	6477.38	5020.03	0.25E+08	1.203	-0.08

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	818.	1037.	1388.	2453.	4398.	6006.	8412.	10480.	12795.	15387.
2	1171.	1429.	1847.	3171.	5822.	8231.	12158.	15839.	20257.	25556.
3	1271.	1558.	2026.	3531.	6605.	9444.	14141.	18596.	24000.	30540.
4	1344.	1656.	2166.	3801.	7129.	10189.	15221.	19970.	25702.	32610.
5	1378.	1714.	2264.	4033.	7632.	10933.	16345.	21428.	27542.	34878.
6	1398.	1747.	2322.	4207.	8135.	11810.	17937.	23779.	30890.	39523.
7	1469.	1824.	2407.	4315.	8298.	12036.	18290.	24281.	31598.	40517.
8	1552.	1911.	2503.	4433.	8469.	12266.	18650.	24790.	32324.	41541.
9	1663.	2035.	2643.	4610.	8671.	12457.	18780.	24826.	32213.	41213.
10	1720.	2098.	2717.	4722.	8887.	12789.	19348.	25649.	33384.	42849.

STATION : 8411500   SALT SCREWBEAN DRAW NR ORLA, TEX (DISC)
LOCATION   : LATITUDE N31:52:40, LONGITUDE W103:56:50
DRAINAGE AREA   :   464.00 mi2 (1202. km2)
PERIOD OF RECORD: 09/1939 - 09/1957
GAGE ALTITUDE   : 2801.19 (853.8 m)
TOTAL PERIOD OF RECORD: 14 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8411500

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	2036.32	3513.65	0.12E+08	3.372	6.26
2	2501.87	4111.51	0.17E+08	3.371	6.26
3	2580.28	4174.70	0.17E+08	3.361	6.23
4	2605.35	4182.71	0.17E+08	3.350	6.19
5	2613.55	4185.68	0.18E+08	3.349	6.19
6	2619.41	4187.43	0.18E+08	3.347	6.19
7	2631.39	4186.29	0.18E+08	3.346	6.18
8	2636.97	4186.98	0.18E+08	3.343	6.18
9	2645.28	4186.50	0.18E+08	3.341	6.17
10	2650.24	4186.82	0.18E+08	3.339	6.16

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	98.	158.	285.	883.	2753.	5001.	9468.	14313.	20762.	29236.
2	133.	223.	411.	1252.	3564.	5990.	10223.	14282.	19144.	24913.
3	138.	234.	436.	1332.	3725.	6155.	10259.	14073.	18520.	23664.
4	139.	238.	444.	1359.	3780.	6213.	10276.	14012.	18325.	23272.
5	139.	239.	447.	1369.	3799.	6230.	10270.	13969.	18223.	23085.
6	140.	240.	450.	1377.	3814.	6243.	10267.	13940.	18151.	22951.
7	140.	241.	454.	1393.	3847.	6275.	10265.	13878.	17992.	22650.
8	140.	242.	455.	1399.	3860.	6291.	10276.	13876.	17968.	22593.
9	140.	242.	457.	1409.	3883.	6315.	10286.	13856.	17898.	22449.
10	140.	243.	459.	1415.	3896.	6328.	10288.	13839.	17849.	22353.

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STATION   : 8434000   TOYAH CR BL TOYAH LK NR PECOS, TEX (DISC)
LOCATION   : LATITUDE N31:21:00, LONGITUDE W103:24:00
DRAINAGE AREA :   3709.00 mi2 (9608. km2)
PERIOD OF RECORD: 09/1939 - 09/1951
GAGE ALTITUDE : 2560.00 (780.2 m)
TOTAL PERIOD OF RECORD: 12 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8434000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1461.04	2231.35	0.50E+07	1.748	0.27
2	2521.54	3788.10	0.14E+08	1.558	-0.28
3	2987.21	4318.81	0.19E+08	1.399	-0.63
4	3253.34	4623.48	0.21E+08	1.316	-0.82
5	3440.79	4833.76	0.23E+08	1.264	-0.94
6	3578.56	4992.54	0.25E+08	1.232	-1.02
7	3703.74	5134.10	0.26E+08	1.204	-1.08
8	3795.59	5247.34	0.28E+08	1.191	-1.11
9	3861.92	5333.15	0.28E+08	1.185	-1.12
10	3911.24	5398.52	0.29E+08	1.182	-1.13

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	4.	10.	32.	258.	1949.	5439.	15894.	31382.	57334.	99084.
2	8.	19.	56.	440.	3279.	9205.	27318.	54766.	101780.	179196.
3	10.	26.	75.	560.	3992.	10916.	31461.	61838.	112837.	195255.
4	13.	31.	90.	641.	4389.	11772.	33279.	64642.	116762.	200249.
5	14.	35.	99.	707.	4728.	12439.	34279.	65307.	115711.	194647.
6	16.	38.	108.	757.	4959.	12867.	34868.	65635.	114960.	191227.
7	17.	40.	115.	800.	5167.	13285.	35594.	66451.	115460.	190555.
8	18.	43.	121.	828.	5281.	13527.	36181.	67559.	117506.	194254.
9	19.	44.	124.	845.	5379.	13756.	36712.	68440.	118844.	196146.
10	19.	45.	126.	858.	5452.	13921.	37075.	69008.	119647.	197167.

STATION : 8435800 COYANOSA DRAW NEAR FORT STOCKTON, TEX (DISC)
LOCATION : LATITUDE N31:02:27, LONGITUDE W103:08:15
DRAINAGE AREA : 1182.00 mi2 (3062. km2)
PERIOD OF RECORD: 02/1964 - 09/1977
GAGE ALTITUDE : 2846.86 (867.7 m)
TOTAL PERIOD OF RECORD: 13 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8435800

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	1413.91	2565.36	0.66E+07	2.147	1.06
2	1807.99	3309.90	0.11E+08	2.151	1.12
3	1911.46	3558.69	0.13E+08	2.207	1.33
4	2004.27	3800.68	0.14E+08	2.255	1.51
5	2078.36	3992.79	0.16E+08	2.325	1.78
6	2142.06	4182.25	0.17E+08	2.393	2.05
7	2159.61	4235.17	0.18E+08	2.412	2.12
8	2161.29	4240.24	0.18E+08	2.414	2.13
9	2165.27	4252.25	0.18E+08	2.418	2.14
10	2166.03	4254.56	0.18E+08	2.419	2.15

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	71.	91.	131.	339.	1287.	3058.	8805.	18819.	39252.	80511.
2	80.	103.	151.	406.	1610.	3921.	11618.	25312.	53753.	112156.
3	79.	102.	151.	411.	1665.	4114.	12411.	27400.	58944.	124566.
4	79.	102.	150.	412.	1697.	4256.	13099.	29377.	64210.	137882.
5	81.	105.	154.	423.	1746.	4382.	13498.	30292.	66254.	142372.
6	82.	105.	154.	423.	1763.	4466.	13938.	31608.	69870.	151760.
7	82.	105.	154.	423.	1768.	4489.	14059.	31971.	70874.	154386.
8	82.	105.	154.	423.	1768.	4491.	14070.	32006.	70970.	154638.
9	82.	105.	154.	423.	1769.	4496.	14097.	32087.	71197.	155233.
10	82.	105.	154.	423.	1769.	4497.	14102.	32103.	71241.	155348.

STATION   : 08447020   INDEPENDENCE CREEK NR SHEFFIELD, TX
LOCATION   : LATITUDE N30:27:07, LONGITUDE W101:43:58
DRAINAGE AREA   :   763.00 mi2 (1976. km2)
PERIOD OF RECORD: 01/1974 - 09/1985
GAGE ALTITUDE   : 1883.00 (573.9 m)
TOTAL PERIOD OF RECORD: 11 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8447020

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	4852.65	13341.45	0.18E+09	3.300	4.48
2	5919.58	15846.89	0.25E+09	3.290	4.46
3	6822.24	18353.71	0.34E+09	3.295	4.47
4	7435.67	20070.05	0.40E+09	3.298	4.48
5	7997.54	21639.11	0.47E+09	3.300	4.48
6	8175.69	21838.47	0.48E+09	3.300	4.48
7	8354.92	22103.38	0.49E+09	3.299	4.48
8	8470.14	22183.95	0.49E+09	3.299	4.48
9	8572.92	22239.21	0.49E+09	3.298	4.48
10	8674.44	22289.59	0.50E+09	3.298	4.47

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	65.	94.	158.	560.	2944.	8278.	28569.	68533.	158530.	357230.
2	125.	166.	254.	776.	3675.	10046.	34292.	82725.	193895.	445570.
3	172.	219.	320.	904.	4101.	11170.	38517.	94414.	225789.	531126.
4	221.	270.	376.	986.	4310.	11746.	41190.	103030.	252454.	610786.
5	268.	319.	430.	1063.	4505.	12258.	43486.	110416.	275700.	681063.
6	318.	374.	495.	1178.	4784.	12710.	43921.	109594.	269332.	655388.
7	370.	428.	556.	1271.	4980.	13027.	44409.	110039.	269088.	652257.
8	419.	480.	612.	1355.	5146.	13266.	44587.	109590.	266332.	642325.
9	467.	529.	666.	1434.	5300.	13490.	44769.	109236.	263946.	633516.
10	518.	582.	723.	1514.	5448.	13696.	44924.	108894.	261813.	625888.

STATION : 8449000   DEVILS R NR JUNO, TEX (DISC)
LOCATION : LATITUDE N29:57:48, LONGITUDE W101:08:42
DRAINAGE AREA : 2730.00 mi2 (7072. km2)
PERIOD OF RECORD: 06/1925 - 09/1973
GAGE ALTITUDE : 1489.70 (454.0 m)
TOTAL PERIOD OF RECORD: 35 YRS.

SUMMARY STATISTICS OF VOLUMES (AC. FT.) FOR GAGE # 8449000

DURATION	MEAN	STD DEV	VAR	SKEWNESS	KURTOSIS
1	32406.86	50842.17	0.26E+10	2.003	2.58
2	43291.42	64023.10	0.41E+10	1.535	0.47
3	48147.46	69796.20	0.49E+10	1.396	0.02
4	52764.02	78067.77	0.61E+10	1.480	0.31
5	54984.42	81660.83	0.67E+10	1.496	0.37
6	55968.11	82908.95	0.69E+10	1.492	0.36
7	56860.00	84097.41	0.71E+10	1.493	0.34
8	57533.70	84823.76	0.72E+10	1.492	0.33
9	58920.55	85906.27	0.74E+10	1.436	0.16
10	59533.73	86347.99	0.75E+10	1.421	0.11

EXTREME FLOOD VOLUMES (AC. FT.) LOG PEARSON TYPE III ESTIMATES FOR DIFFERENT -- DURATIONS

REC. INTERVAL (YEARS)	1.05	1.11	1.25	2.0	5.0	10.0	25.0	50.0	100.0	200.0
EXC. PROBABILITY (%)	95.0	90.0	80.0	50.0	20.0	10.0	4.0	2.0	1.0	0.5
DURATION (DAYS)										
1	179.	399.	1047.	6491.	39309.	99770.	267490.	503872.	887381.	1489689.
2	300.	642.	1610.	9294.	53191.	131902.	346444.	645605.	1127855.	1881965.
3	397.	816.	1961.	10634.	58583.	143889.	376923.	703876.	1236009.	2076187.
4	496.	986.	2287.	11772.	62812.	153057.	400170.	748650.	1320758.	2231285.
5	584.	1132.	2551.	12558.	64956.	156641.	406780.	759238.	1339304.	2264587.
6	668.	1266.	2786.	13187.	66128.	157482.	404646.	751058.	1319925.	2225511.
7	754.	1402.	3017.	13774.	67165.	158186.	402728.	743969.	1303495.	2192940.
8	832.	1525.	3228.	14322.	68168.	158826.	400296.	735148.	1282098.	2148462.
9	908.	1644.	3434.	14926.	69961.	162090.	406804.	745689.	1299340.	2176454.
10	989.	1770.	3646.	15463.	70952.	162780.	404675.	737587.	1279262.	2134153.